

# Beaver Creek (TM 5243) Traffic Impact Study

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Prepared by:  
**Katz, Okitsu & Associates**  
*Traffic Engineers and Transportation Planners*

Katz, Okitsu & Associates  
2251 San Diego Avenue, Suite A-270  
San Diego, California 92110  
(619) 683-2933 Fax (619) 683-7982

Prepared for:  
Primo Builders, Inc.  
1525 South Escondido Boulevard #E  
Escondido, CA 92025

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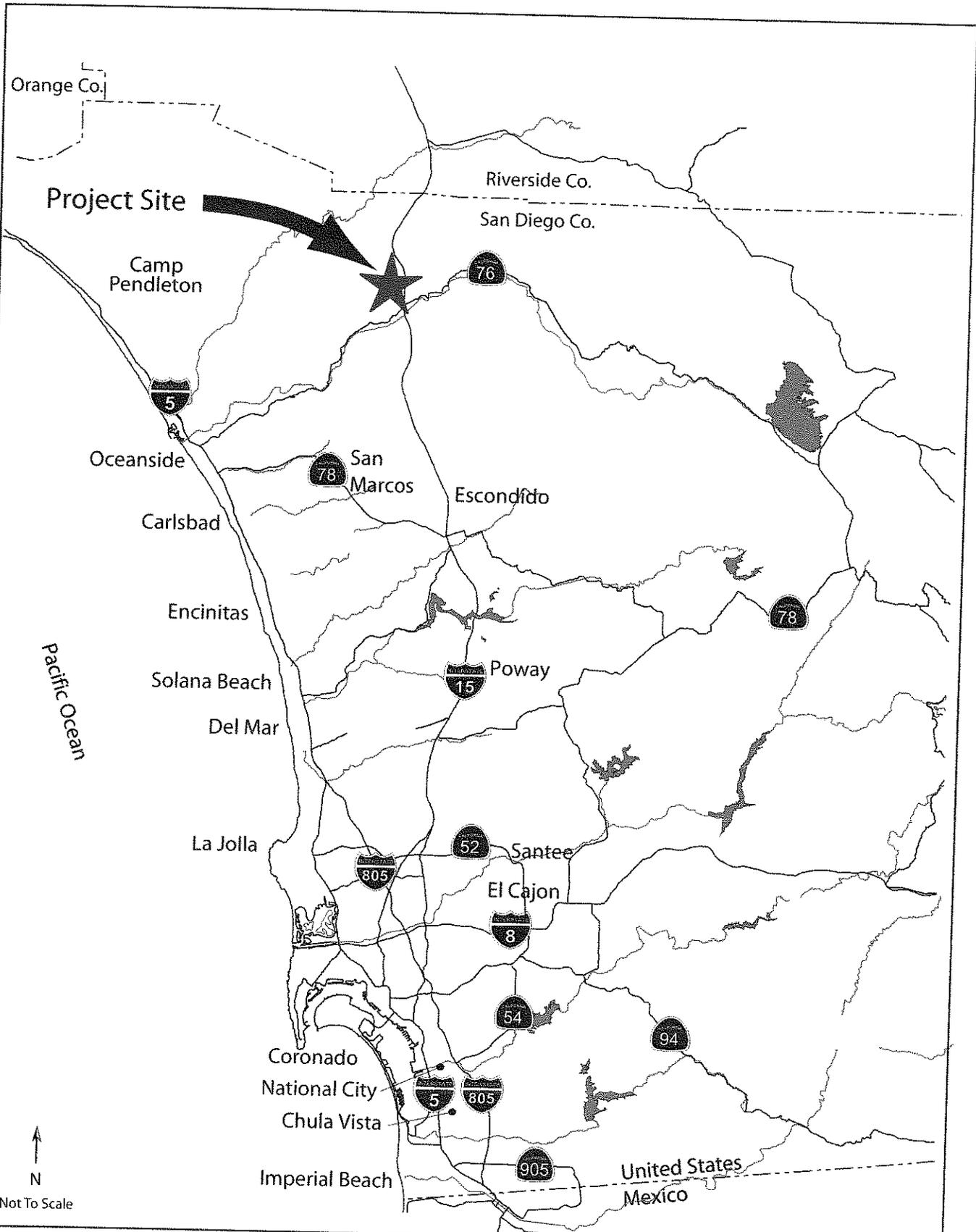
## 1.0 Introduction

This traffic study has been prepared to evaluate the potential impacts of the proposed Beaver Creek residential project located north of the Fallbrook Street/Reche Road intersection in the Fallbrook area of the County of San Diego. The Beaver Creek project is a major subdivision proposing 8 residential lots of which one lot is already developed with a single-family residence. The subdivision would conform to the adopted zoning. Katz, Okitsu & Associates was retained by Primo Builders, Inc. to analyze the traffic impacts of the proposed development. Figure 1 shows the project vicinity, Figure 2 shows the study area for this analysis, and Figure 3 illustrates the project site plan.

### ***Background***

This traffic study is based on the need to perform a cumulative analysis given the recent exemption from the California Environmental Quality Act (CEQA) of "de minimus effects" which were removed from the State law as a result of a lawsuit. As a result, the County of San Diego has recommended that cumulative projects be reviewed for even the smallest of projects. The Beaver Creek project falls within this recommendation. The proposed project would generate a total of 84 net daily trips, with 7 occurring in the AM peak period and 8 occurring in the PM peak period.

In order to gain approval for the project, a traffic study was prepared to fulfill the requirements of the Draft County of *San Diego Guidelines for Determining Significance*. This project will not generate more than 2,400 daily trips and will not generate more than 200 peak hour trips. Therefore, this project is not required to conform to the Congestion Management Program, and a detailed analysis of Regionally Significant Arterials and is also not required.



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Figure 1

Project Vicinity

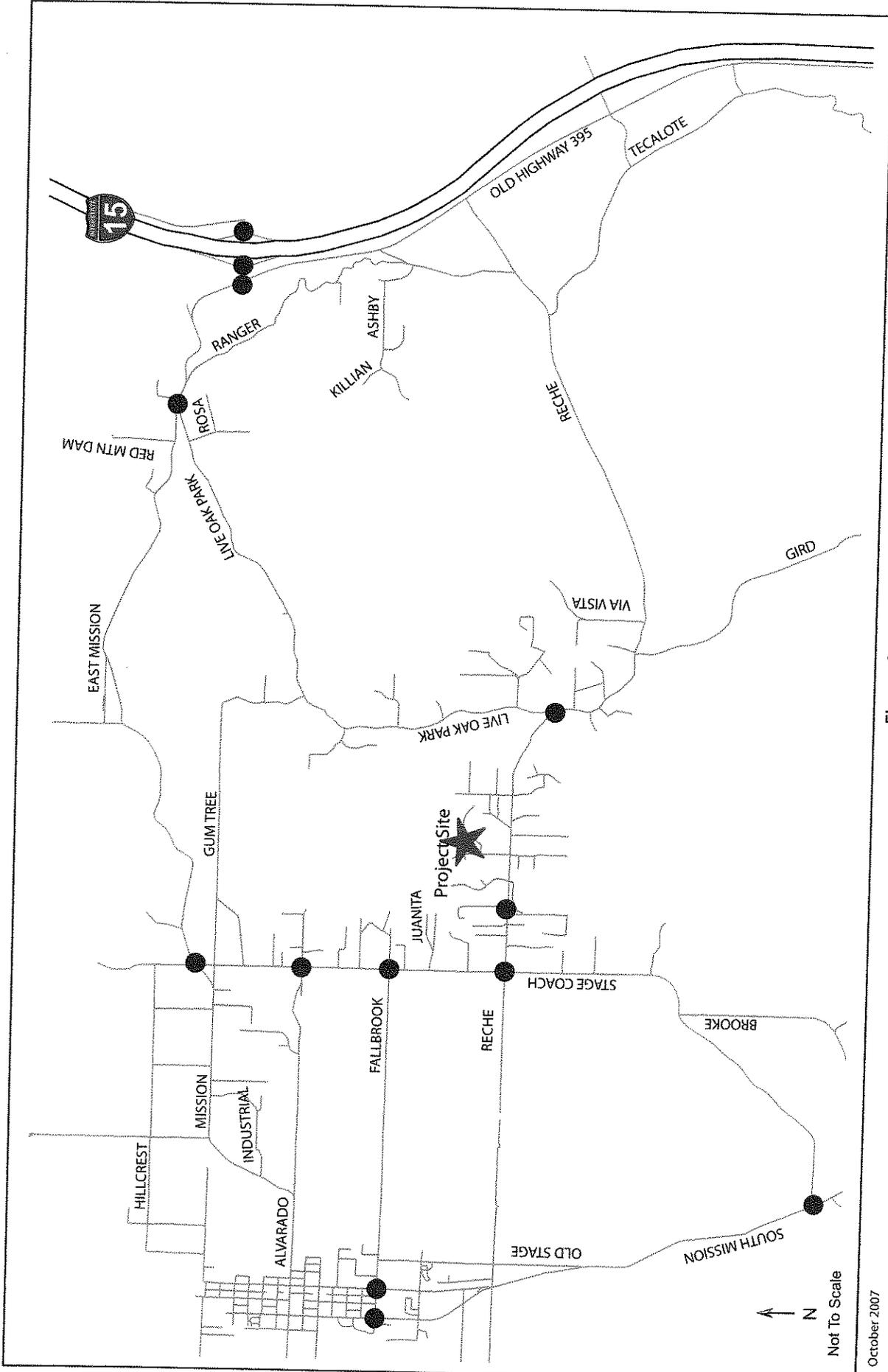


Figure 2  
Project Study Area and Site Location





## 2.0 Methodologies

This chapter documents the methodologies and assumptions used to conduct the circulation impact analysis for the Beaver Creek residential development. This section contains the following background information:

- Study timeframes
- Study area description
- Capacity analysis methodologies

### ***Study Timeframes***

This report presents an analysis of the following timeframes:

- Existing
- Near-Term (Cumulative) Without Project
- Near-Term (Cumulative) With Project

### ***Project Study Area***

The project study area for the Beaver Creek development is shown in Figure 2. The area consists of the following intersections and their adjacent roadway segments:

#### Study Intersections:

1. E. Mission Road and I-15 NB Ramps
2. E. Mission Road and I-15 SB Ramps
3. E. Mission Road and Old Hwy 395
4. E. Mission Road and Live Oak Park Rd.
5. E. Mission Road and Stagecoach Ln.
6. Stagecoach Ln. and Alvarado St.
7. Stagecoach Ln. and Fallbrook St.
8. Stagecoach Ln. and Reche Rd.
9. Stagecoach Ln. and S. Mission Road.
10. Live Oak Park Rd. and Reche Rd.
11. Main Ave. and Fallbrook St.
12. S. Mission Rd. and Fallbrook St.
13. Fallbrook St. and Reche Rd. (Project Access)



Study Roadway Segments:

14. Mission Road – I-15 to Old Hwy 395
15. Mission Road – Old Hwy 395 to Live Oak Park
16. Mission Road – Live Oak Park to Hamilton Ln.
17. Mission Road – Hamilton Ln. to Stagecoach Ln.
18. Stagecoach Ln. – Mission Road to Gum Tree Ln.
19. Stagecoach Ln. – Gum Tree Ln. to Alvarado St.
20. Stagecoach Ln. – Alvarado St. to Fallbrook St.
21. Stagecoach Ln. – Fallbrook St. to Reche Rd.
22. Stagecoach Ln. – Reche Rd. to South Mission Rd.
23. Alvarado St. – Stagecoach Ln. to Main Ave.
24. Fallbrook St. – Stagecoach Ln. to Main Ave.
25. Reche Rd. – East of Live Oak Park
26. Live Oak Park Rd. – Mission Rd. to Gum Tree Ln.
27. Live Oak Park Rd. – Gum Tree Ln. to Alvarado St.
28. Live Oak Park Rd. – Alvarado St. to Reche Rd.

This project study area is generally based on the assumed project trip distribution and assignment. The trip distribution and assignment determines how much project traffic is attributable to each link in the roadway network and which intersections they affect.

***Analysis Methodologies***

This section presents a brief overview of traffic analysis methodologies and concepts used in this study. Street system operating conditions are typically described in terms of “level of service.” Level of service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service (LOS) ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). A more detailed description of the concepts described in this section is provided in Appendix A, Appendix A-1 of this document.



### **Roadway Segment Capacity Analysis**

The County of San Diego has published daily traffic volume standards for roadways within its jurisdiction. To determine existing service levels on study area roadway segments, we compared the appropriate average daily traffic thresholds for level of service, the daily capacity of the study area roadway segments, and the existing and future volumes in the study area. The thresholds for determining level of service used in this analysis are summarized in Appendix A, Table A-1.

The values shown in Table A-1 are not intended to serve as an exact description of the actual operating level of service on a particular roadway segment. The capacity of roadway facilities is affected by a number of factors, including pavement width, access to cross streets and driveways, intersection signal timing, geometry, and on-street parking. The actual functional capacity is based on the ability of arterial intersections to accommodate peak hour volumes. Efficient designs of intersections to achieve acceptable levels of service could result in higher capacities. Thus, higher volumes may occur on arterial segments than those shown in these tables.

### **Intersection Capacity Analysis**

The analysis of peak hour intersection performance was conducted using the Traffix analysis software program, which uses the "operational analysis" procedure for signalized intersections as defined in the Highway Capacity Manual (HCM). Both of the analysis intersections in this study are signalized. This technique uses 1,900 passenger cars per hour of green per lane (pchgpl) as the maximum saturation flow of a single lane at an intersection. This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition (i.e., percent of trucks) and shared lane movements (e.g., through and right-turn movements from the same lane). Level of service for signalized intersections is based on the average time (seconds) that vehicles entering an intersection are stopped or delayed. Appendix A, Table A-3 lists the HCM LOS/ delay criteria for signalized intersections.

### **Significance Analysis**

To determine project impacts, the County of San Diego has developed a series of thresholds within the "Guidelines for Determining Significance" based on allowable increases in road segment ADTs, intersection peak hour trips and intersection seconds of delay which become more stringent as level of service worsens. The acceptable level of service for roadway segments and intersections in the County of San Diego is level of service D. Where the roadway segment or Intersection is forecast to operate at LOS E or F, the allowable increases are shown below in Table 1.



**Table 1**  
**Measures of Significant Project Impacts to Congestion**

**Allowable Increases on Congested Roads**  
**Road Segments**

<i>Roadway Segment LOS</i>	<i>2-Lane Road</i>	<i>4-Lane Road</i>	<i>6-Lane Road</i>
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

**Intersections**

<i>Intersection LOS</i>	<i>Signalized</i>	<i>Unsignalized</i>
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: San Diego County Guidelines for Determining Significance.

Should the project exceed the allowable ADT on segments, the determination of significance (Yes/No) is shown in **bold type** to indicate a significant project impact that requires mitigation. Where intersections are forecast to operate at LOS E or F and the thresholds set in Table 1 are exceeded, the determination of significance (Yes/No) is shown in **bold type** to indicate a significant impact that requires mitigation.

**Traffic Count Data**

Existing average daily traffic data and intersection counts were obtained from the "Crest (TM 5195)" Traffic Study performed by Darnell & Associates in 2002. A conservative growth factor of 6% per year (12% total) was applied to the counts to mimic approximate present day conditions since traffic volumes increased between 4% and 6% per year from 1999 to 2002. Count data at intersections not found in the "Crest" study were obtained for the purposes of this report at the intersections of Fallbrook Street/Reche Road and S. Mission Road/Fallbrook Street in November 2004. All count data used in this study can be found in Appendix B.



### **3.0 Existing Conditions**

#### ***Existing Circulation Network***

The streets in the site vicinity that might sustain impacts because of the proposed project include East Mission Road, Stagecoach Lane, Alvarado Street, Fallbrook Street, Reche Road, and Live Oak Park Road. Figure 4 illustrates the circulation network and intersection geometries.

#### ***East Mission Road***

East Mission Road is an east-west collector roadway extending from South Mission Road to I-15. It is a two-lane roadway (one lane in each direction) with speeds posted at 45 mph. There are bike along the roadway and no parking is allowed.

#### ***Stagecoach Lane***

Stagecoach Lane is a north-south two-lane collector roadway extending from East Mission Road to S. Mission Road. It is located 0.5 miles west of the project. Speeds are posted along the roadway at 45 mph.

#### ***Alvarado Street***

Alvarado Street is an east-west two-lane collector roadway extending from Stagecoach Lane to South Mission Road. It offers an alternative for project vehicles to access the downtown area other than traveling on Fallbrook Street.

#### ***Fallbrook Street***

Fallbrook Street is comprised of two separate discontinuous roadways. The main segment is an east-west two-lane collector roadway extending from Stagecoach Lane to South Mission Road. The second segment provides direct project access and is a north-south minor roadway connecting to Reche Road. The estimated distance between these two discontinuous Fallbrook Street roadway segments is approximately 0.5 miles.

The north-south segment of Fallbrook Street (providing direct project access) consists of 40 feet of paved roadway width. Thirty feet of paved roadway is designated for north-south vehicular travel while the remaining 10 feet is designated for parking on the east side of the street. There are existing homes located west of the roadway while a hillside serves as the eastern boundary. This segment of Fallbrook Street is built up to the project property line and does not currently traverse the project site.

#### ***Beavercreek Lane***

Beavercreek Lane is a north-south residential street located north of the project area. This roadway serves as the primary access for the existing residence on the project site. The paved roadway width of Beavercreek Lane is 24 feet with no existing sidewalks.

#### ***Reche Road***

Reche Road is an east-west two-lane roadway extending from Stagecoach Lane and Old Highway 395. Speeds are posted along the roadway at 45 mph and 25 mph in the vicinity of the school. Between Fallbrook Street and Stagecoach Lane it operates as a 3-lane town collector roadway with a center left turn lane, while the remainder of the roadway is a two-lane collector facility.

#### ***Live Oak Park Road***



Live Oak Park Road is a two-lane mostly east-west collector roadway located east of the project area. The roadway provides an alternate route for project trips accessing Interstate 15. Speeds are posted along the roadway between 35 and 45 mph.

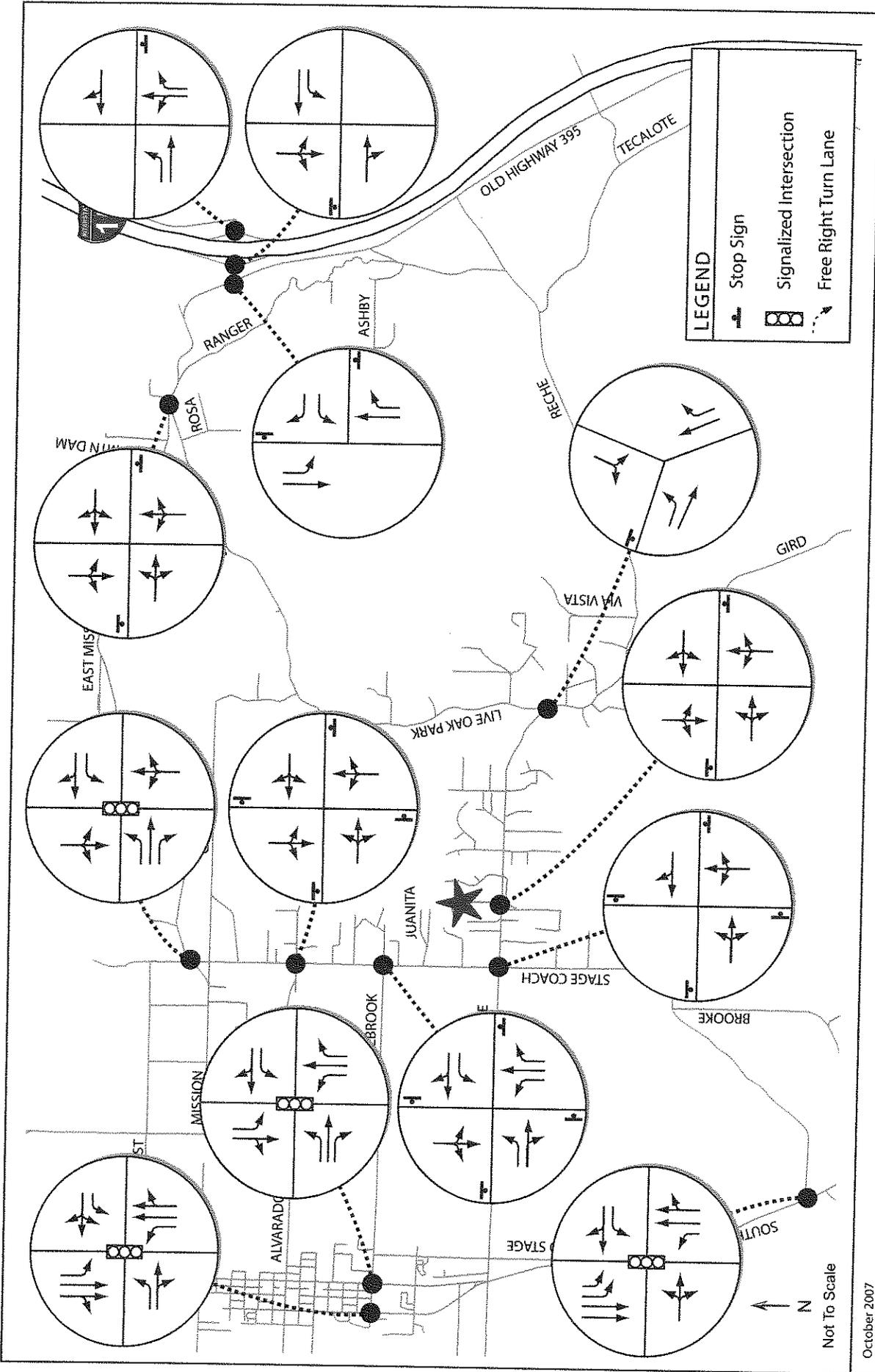


Figure 4  
Existing Circulation Network

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### Daily Roadway Segment Operations

The County of San Diego Circulation Element contains daily traffic volume standards for roadways within the County. To determine existing service levels on study area roadway segments, we compared the adopted average daily traffic thresholds for level of service, the daily capacity of the study area roadway segments, and the existing volumes in the study area. When evaluating traffic conditions, level of service A-D is considered acceptable for urbanized areas where further improvement in level of service is not feasible or practical. The thresholds for determining level of service on County of San Diego roadways are summarized in Appendix A, Table A-1. Table 2 is a summary of existing conditions, whereas Figure 5 graphically presents the results of this analysis.

**Table 2**  
**Existing Daily Roadway Segment Conditions**

Roadway Segment	Classification Lanes	LOSE Capacity	Average Daily Traffic (ADT)	Volume to Capacity Ratio	Level of Service
Mission Road – I-15 to Old Hwy 395	2/Collector	16,200	17,808	1.099	F
Mission Road – Old Hwy 395 to Live Oak Park	2/Collector	16,200	21,814	1.347	F
Mission Road – Live Oak Park to Hamilton Ln.	2/Collector	16,200	20,138	1.243	F
Mission Road – Hamilton Ln. to Stagecoach Ln.	2/Collector	16,200	21,055	1.300	F
Stagecoach Ln. – Mission Road to Gum Tree Ln.	2/Collector	16,200	4,811	0.297	C
Stagecoach Ln. – Gum Tree Ln. to Alvarado St.	2/Collector	16,200	7,112	0.439	D
Stagecoach Ln. – Alvarado St. to Fallbrook St.	2/Collector	16,200	7,640	0.472	D
Stagecoach Ln. – Fallbrook St. to Reche Rd.	2/Collector	16,200	11,852	0.732	E
Stagecoach Ln. – Reche Rd. to South Mission Rd.	2/Collector	16,200	6,085	0.376	C
Alvarado St. – Stagecoach Ln. to Main Ave.	2/Collector	16,200	4,644	0.287	C
Fallbrook St. – Stagecoach Ln. to Main Ave.	2/Collector	16,200	13,137	0.811	E
Reche Rd. – East of Live Oak Park	2/Collector	16,200	8,692	0.537	D
Live Oak Park Rd. – Mission Rd. to Gum Tree Ln.	2/Collector	16,200	2,014	0.124	B
Live Oak Park Rd. – Gum Tree Ln. to Alvarado St.	2/Collector	16,200	1,644	0.101	A
Live Oak Park Rd. – Alvarado St. to Reche Rd.	2/Collector	16,200	1,644	0.101	A

As shown in Table 2, all of the study segments on Mission Road are operating at LOS F and the segment of Fallbrook Street from Stagecoach Lane to Main Avenue is operating at LOS E. In addition, the segment of Stagecoach Ln from Fallbrook St. to Reche Rd. is operating at LOS E.

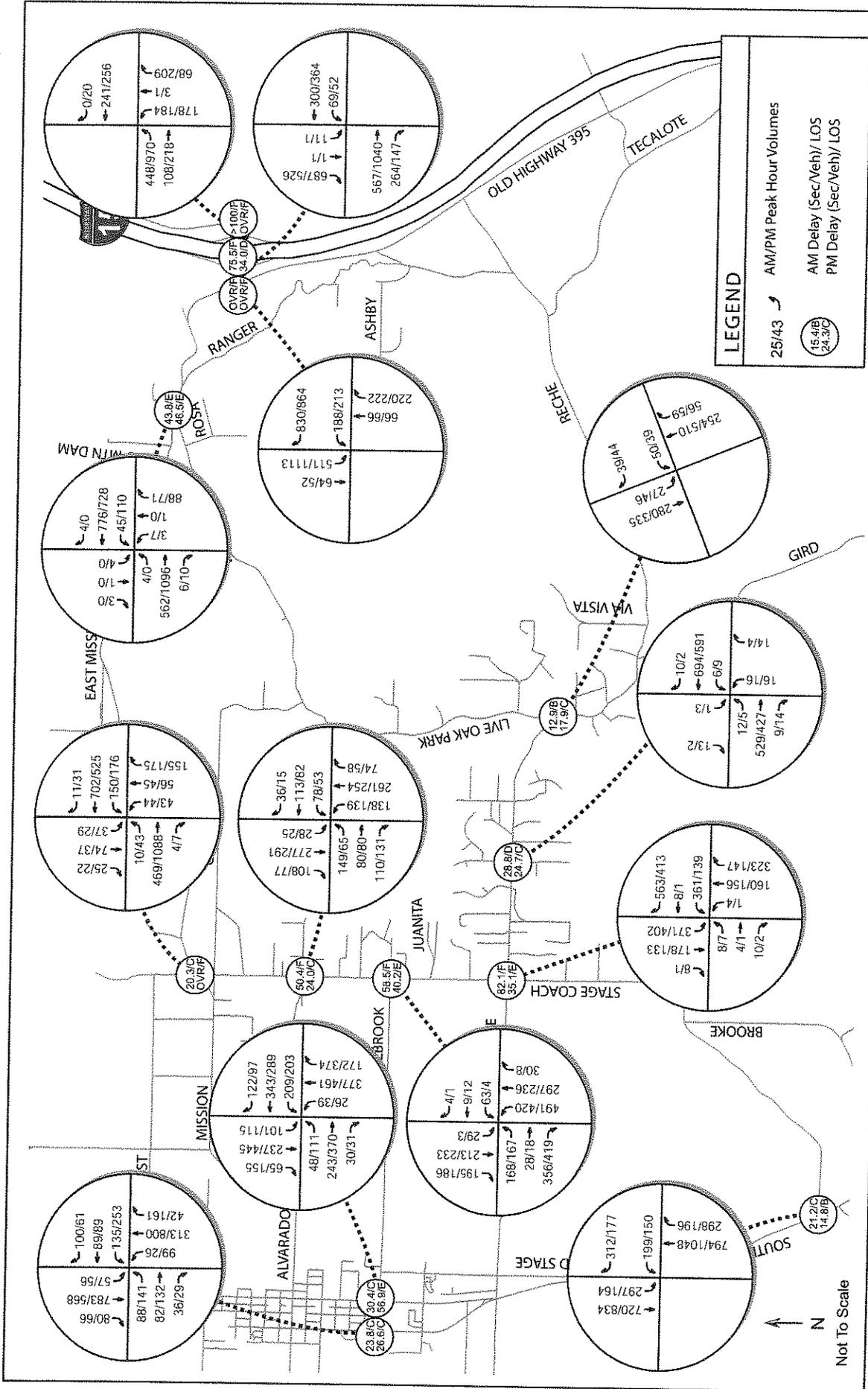


Figure 5

Existing Daily Peak Hour Intersection and Segment Conditions



The actual functional capacity of a roadway is based on the ability of arterial intersections to accommodate peak hour volumes. Efficient design of intersections to achieve acceptable levels of service during peak hours of demand could result in higher roadway capacities.

**Peak Hour Intersection Performance**

Traffic conditions are evaluated using the procedures outlined in the *Highway Capacity Manual 2000* (HCM), a publication of the Transportation Research Board. Appendix A, Table A-3 and Table A-4 contain a summary of this analysis method as well as the level of service criteria used.

Level of service A-D is considered acceptable for peak hour intersection operations in the County of San Diego. The following table summarizes the existing peak hour operating conditions for the study intersections. Figure 5 shows existing morning and evening peak hour traffic volumes and levels of service for study intersections. Appendix B contains the worksheets used in this analysis.

**Table 3**  
**Existing Peak Hour Intersection Conditions**

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	Average Intersection Delay (sec.)	Level of Service	Average Intersection Delay (sec.)	Level of Service
E. Mission Road and I-15 NB Ramps	236.8	F	>250.0	F
E. Mission Road and I-15 SB Ramps	75.5	F	34	D
E. Mission Road and Old Hwy 395	>250.0	F	>250.0	F
E. Mission Road and Live Oak Park Rd.	43.8	E	46.5	E
E. Mission Road and Stagecoach Ln.	20.3	C	68.8	E
Stagecoach Ln. and Alvarado St.	50.4	F	24	C
Stagecoach Ln. and Fallbrook St.	58.5	F	40.2	E
Stagecoach Ln. and Reche Rd.	82.1	F	35.1	E
Stagecoach Ln. and S. Mission Road.	21.2	C	14.8	B
Live Oak Park Rd. and Reche Rd.	12.9	B	17.9	C
Main Ave. and Fallbrook St.	30.4	C	56.9	E
S. Mission Rd. and Fallbrook St.	23.8	C	26.6	C
Fallbrook St. and Reche Rd. (Project Access)	28.8	D	24.7	C

As shown in Table 3, only the four intersections of Stagecoach/S. Mission, Live Oak Park/Reche, S. Mission/Fallbrook and Fallbrook/Reche operate at LOS D or better under existing AM and PM peak. The other 9 intersections operate at LOS E or F in either the AM or PM peaks.



## 4.0 Proposed Project Traffic

The proposed action for the property is to develop the area into the 7 large-lot dwelling units. At present, there is one existing home on the site, which will remain throughout development. Any additional increase in the current intensity of land use on the site will result in some level of increase in traffic on streets and driveways leading to the site.

### **Project Trip Generation**

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. All or part of these trips will result in traffic increases on the streets where they occur. The traffic generated is a function of the extent and type of development proposed for the site.

Vehicular traffic generation characteristics for projects are estimated based on rates in the SANDAG (*Not so*) *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002)*. This manual provides standards and recommendations for the probable traffic generation of various land uses based upon local, regional and nation-wide studies of existing developments in comparable settings. Appendix C contains excerpts from the trip generation manual used in this analysis. Table 4 summarizes the trips generated by the proposed project.

**Table 4**  
**Trip Generation for the Proposed Project**

Project	Land Use	Intensity	Trip Rate	Per	Daily Trips	A.M. Trips	In	Out	P.M. Trips	In	Out
Dwelling Units of > 0.5 Acres	SFDU	7	12	Unit	84	7	2	5	8	5	3

Source: SANDAG (*Not so*) *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002)*.

As shown in Table 4, the proposed project would add 84 daily trips to the circulation network, with 7 occurring in the AM peak hour and 8 during PM peak hour. The project impacts are analyzed under the existing and near-term cumulative scenarios. The existing plus project scenario is not analyzed since the project does not meet the thresholds set in Table 1 to conduct this analysis.

### **Project Access**

The proposed project will take access from Fallbrook Street where regional access is possible via the intersection of Fallbrook Street and Reche Road. Fallbrook Street is deemed more than sufficient to handle the additional vehicular demand and is of sufficient width.

### **Project Trip Distribution and Assignment**

Trip distribution and assignment is the process of identifying the probable destinations, directions, or traffic routes that project related traffic will likely affect. In this case, the project trip distribution was estimated from observed traffic patterns, experience and through information obtained through the "Crest (TM 5195)" approved subdivision plan. The trip distribution and assignment from the "Crest (TM 5195)" report was based on a Select Zone Assignment from the SANDAG Series 9 2005 model year. Discussion with County of San Diego Traffic Engineering Staff also helped to define the proposed project trip distribution and assignment. Figure 6 shows the project distribution and assignment for the surrounding circulation network for the project.





## **5.0 Existing Plus Project Conditions**

The existing plus project scenario is not analyzed since the project does not meet the threshold set in Table 1 to conduct such an analysis. However, since the intersection thresholds are set at both vehicles and seconds of delay, a check of all existing intersections was done to ensure that there were no direct impacts.

## **6.0 Near-Term (Cumulative) Conditions**

This section documents near-term (cumulative) conditions in the project site vicinity both without and with the proposed project. The near-term analysis takes into account existing traffic volumes plus the cumulative project traffic from the approved "Crest (TM 5195)" subdivision project. The "Crest" project near-term (cumulative) traffic volumes were based on 32 pending projects that would impact the same roadway segments and intersections as the Beaver Creek project. These 32 projects consist of 592 single-family residential dwelling units, 59 condominium dwelling units, two churches, 1 sports park, 1 school expansion, 1 office building, and 1 1,040 square foot commercial development. The list of cumulative projects is included as Table 5.



**Table 5**  
**Cumulative Projects List**

#	ID Number	Project Status	Location	Project Size (SF, DUs, Etc.)
1	TPM 19742	Approved	Canonita Dr. s/o Reche Rd.	2 Estate Dwelling Units
2	TPM 20235	Approved	Yucca Rd. n/o Reche Rd.	4 Estate Dwelling Units
3	TPM 20354	Approved	Dallas Rd. n/o Reche Rd. e/o Stagecoach	5 Single-Family Dwelling Units
4	TPM 20355	Approved	Dallas Rd. n/o Reche Rd. e/o Stagecoach	5 Single-Family Dwelling Units
5	TPM 20356	Approved	Dallas Rd. n/o Reche Rd. e/o Stagecoach	5 Single-Family Dwelling Units
6	TPM 20373	Approved	2973 Los Alisos Dr. n/o Brooke Hollow Rd.	4 Estate Dwelling Units
7	TPM 20381	Approved	1324 Camino Zara	4 Estate Dwelling Units
8	TPM 20382	Approved	West side of Stagecoach s/o Reche Rd.	4 Single-Family Dwelling Units
9	TPM 20385	Approved	Constant Creek	5 Single-Family Dwelling Units
10	TPM 20475	Approved	NW corner of Palomino Rd./ Beaman Ln.	5 Single-Family Dwelling Units
11	TPM 20476	Approved	Southside of Canonita Dr. between Wild Rd. & Country Rd.	4 Estate Dwelling Units
12	TPM 20528	Active	Paseo De Olivos e/o Olive Hill Rd.	3 Estate Dwelling Units
13	TPM 20545	Approved	NW corner of Stagecoach/ Joy Rd.	4 Single-Family Dwelling Units
14	TPM 20546	Approved	NW corner of Stagecoach/ Joy Rd.	4 Single-Family Dwelling Units
15	TPM 20547	Approved	Pepper Tree Pl. s/o Fallbrook St. e/o S Mission Rd.	2 Single-Family Dwelling Units
16	TPM 20559	Active	SW corner of Canonita Rd./Wilt Rd.	3 Estate Dwelling Units
17	TPM 20581	Active	Krestel Rd./Ranger Rd. s/o Mission Rd.	4 Estate Dwelling Units
18	TPM 20584	Active	East side of Golden Rd. s/o Fallbrook St.	4 Estate Dwelling Units
19	TM 4713	Approved	E/o S Mission Rd. & n/o Stagecoach	267 Single-Family DUs & Office
20	TM 4729	Approved	Southside of Pala Mesa Rd. between Old Hwy 395 & Wilt Rd.	13 Estate Dwelling Units
21	TM 4750	Approved	N/o Reche Rd. between Ranger Rd. & Yucca Rd.	134 Estate Dwelling Units
22	TM 4823	Approved	End of Ridge Dr. s/o Live Oak Park	26 Single-Family Dwelling Units
23	TM 4993	Approved	Southside of Tumblecreek Ln. w/o Live Oak	21 Single-Family Dwelling Units
24	TM 5166	Approved	SW corner of S Mission Rd./Rockycrest	17 Single-Family Dwelling Units
25	TM 5168	Active	NW corner of Reche Rd./Dallas Rd.	40 Single-Family Dwelling Units
26	TM 5214	Active	NW corner of Winter Haven Rd./ Humming Hills Ln.	9 Single-Family Dwelling Units
27	TM 5231	Active	North side of Canonita Dr. w/o Old Hwy 395	59 Condominiums
28	MUP 60-120	Approved	SW corner of Stagecoach/Fallbrook St.	Church
29	MUP 63-120	Approved	West side of S Mission Rd. n/o Stagecoach	Sports Park
30	MUP 65-041W6	Approved	SE corner of Stagecoach & St Peters Dr.	Church
31	MUP 76-141W1		NW corner of Stagecoach/ E Mission Rd.	52 Student Expansion
32	Rezone	Rezone	Corner of Gum Tree/Stagecoach/E Mission Rd.	1.04 KSF of Commercial

Source: *The "Crest" Traffic Impact Study*, Darnell Associates, September 16, 2002

The total traffic of these cumulative developments is 13,631 daily trips, 1,299 AM peak hour trips, and 1,504 PM peak hour trips. To update the "Crest" project's cumulative condition, a cumulative growth factor of 25% was applied to the near-term (cumulative) traffic volumes to account for any new projects since the approval of the "Crest" study in addition to any new projects that may come on-line between the submittal of this report through the project hearing date.



### ***Daily Roadway Segment Performance***

To determine cumulative service levels on study area roadway segments, we compared the adopted ADT thresholds for LOS, the daily capacity of the study area roadway segments, and the near-term forecast volumes in the study area. Table 6 summarizes the results of this comparison for near-term cumulative future conditions and the proposed project's significance of impact based on the adopted thresholds for incremental increases in ADT. As with the intersection volumes, a growth rate of 25% was applied to the cumulative project traffic volumes in order to anticipate the cumulative project growth between 2002 and 2004 and any additional permits that may be given between the submittal of this study and the hearing date of the project. The amount of acceptable increase in ADT depends on the forecast level of service (the worse the level of service, the smaller the allowable increase in ADT).

As shown in the following table, the near-term cumulative projects as a whole create a significant impact based on the County Guidelines for cumulative projects which: add more than 100 ADT on LOS F two-lane roadways; add more than 200 ADT on LOS E 2-lane roadways; add more than 200 ADT on LOS F 4-lane roadways; or add more than 400 ADT on LOS E 4-lane roadways.

**Cumulative Roadway Segment Impact:** Under the near-term plus project scenario, the cumulative projects (including the Beaver Creek project) collectively contribute more than 100 vehicles to 2-lane roadway segments at LOS F or more than 200 vehicles to segments at LOS E, which include:

1. Mission Road – I-15 to Old Hwy 395 (LOS F)
2. Mission Road – Old Hwy 395 to Live Oak Park (LOS F)
3. Mission Road – Live Oak Park to Hamilton Ln. (LOS F)
4. Mission Road – Hamilton Ln. to Stagecoach Ln. (LOS F)
5. Stagecoach Lane – Fallbrook St. to Reche Rd. (LOS E)
6. Fallbrook Street – Stagecoach Ln. to Main Ave.

Therefore, the project is considered cumulatively considerable on these roadway segments.



**Table 6**  
**Near-Term Daily Roadway Segment Conditions**

Roadway Segment	Classification/Lanes	LOSE Capacity	Cumulative Conditions without the Project		Project ADT	Cumulative Conditions with the Project		Cumulative Impacts?	
			Existing ADT	Cumulative Projects ADT		Forecast ADT Volume	LOS		Forecast ADT Volume
Mission Road - I-15 to Old Hwy 395	2/Collecto T	16,200	17,808	1,853	42	19,703	F	1,895	Yes
Mission Road - Old Hwy 395 to Live Oak Park	2/Collecto T	16,200	21,814	1,609	23	23,445	F	1,632	Yes
Mission Road - Live Oak Park to Hamilton Ln.	2/Collecto T	16,200	20,138	1,940	13	22,091	F	1,953	Yes
Mission Road - Hamilton Ln. to Stagecoach Ln.	2/Collecto T	16,200	21,055	1,835	13	22,903	F	1,848	Yes
Stagecoach Ln. - Mission Road to Gum Tree Ln.	2/Collecto T	16,200	4,811	984	13	5,808	C	997	No
Stagecoach Ln. - Gum Tree Ln. to Alvarado St.	2/Collecto T	16,200	7,112	1,160	13	8,285	D	1,173	No
Stagecoach Ln. - Alvarado St. to Fallbrook St.	2/Collecto T	16,200	7,640	1,627	32	9,300	D	1,659	No
Stagecoach Ln. - Fallbrook St. to Reche Rd.	2/Collecto T	16,200	11,852	2,309	48	14,208	E	2,357	Yes
Stagecoach Ln. - Reche Rd. to South Mission Rd.	2/Collecto T	16,200	6,085	1,177	7	7,269	D	1,184	No
Alvarado St. - Stagecoach Ln. to Main Ave.	2/Collecto T	16,200	4,644	1,814	19	6,477	C	1,833	No
Fallbrook St. - Stagecoach Ln. to Main Ave.	2/Collecto T	16,200	13,137	2,756	16	15,909	E	2,772	Yes
Reche Rd. - East of Live Oak Park	2/Collecto T	16,200	8,692	2,154	29	10,875	D	2,183	No
Live Oak Park Rd. - Mission Rd. to Gum Tree Ln.	2/Collecto T	16,200	2,014	398	10	2,412	B	408	No
Live Oak Park Rd. - Gum Tree Ln. to Alvarado St.	2/Collecto T	16,200	1,644	305	10	1,959	B	315	No
Live Oak Park Rd. - Alvarado St. to Reche Rd.	2/Collecto T	16,200	1,644	540	10	2,184	B	550	No

\* All significant impacts are cumulative impacts.



### ***Near-Term Peak Hour Intersection Performance***

Peak hour intersection volumes under near-term cumulative conditions were forecast based on existing volumes and the traffic associated with other projects plus the growth factor associated with the other projects. The sum of these volumes formed the background base upon which the proposed project trips were added to determine the relative impact of the proposed project on near-term conditions.

Table 7 summarizes the results of this analysis and the significance of the project's cumulative impacts. Figure 7 shows AM and PM peak hour cumulative traffic volumes with the proposed project. Appendix D contains the worksheets used in this analysis.

Ten of the study intersections would operate at worse than LOS D during peak hours both with and without the project under the near-term (cumulative) condition.

**Cumulative Intersection Impact:** Under the near-term plus project scenario, the cumulative projects (including the Beaver Creek project) collectively contribute more than 1 second of delay or 5 peak hour trips on a critical movement to the intersections of:

1. E. Mission Road and I-15 NB Ramps (AM and PM Peak Hours)
2. E. Mission Road and I-15 SB Ramps (AM and PM Peak Hours)
3. E. Mission Road and Old Hwy 395 (AM and PM Peak Hours)
4. E. Mission Road and Live Oak Park Rd. (AM and PM Peak Hours)
5. E. Mission Road and Stagecoach Ln. (PM Peak Hour)
6. Stagecoach Ln. and Alvarado St. (AM and PM Peak Hours)
7. Stagecoach Ln. and Fallbrook St. (AM and PM Peak Hours)
8. Stagecoach Ln. and Reche Rd. (AM and PM Peak Hours)
9. Main Ave. and Fallbrook St. (PM Peak Hour)
10. Fallbrook St. and Reche Rd. (Project Access)

Therefore, the project is considered to be a part of a significant cumulative impact at these intersections.



**Table 7**  
**Near-Term Peak Hour Intersection Conditions**

<i>Intersection</i>	<i>Without Project</i>		<i>With Proposed Project</i>		
	<i>Average Intersection Delay (sec.)</i>	<i>Level of Service</i>	<i>Average Intersection Delay (sec.)</i>	<i>Level of Service</i>	<i>Cumulative Impacts?*</i>
<b>A.M. Peak Hour</b>					
E. Mission Road and I-15 NB Ramps	F	218.1	F	222.6	Yes
E. Mission Road and I-15 SB Ramps	F	62.5	F	63	Yes
E. Mission Road and Old Hwy 395	F	>250.0	F	>250.0	Yes
E. Mission Road and Live Oak Park Rd.	E	41.8	E	42	Yes
E. Mission Road and Stagecoach Ln.	C	23.7	C	23.8	No
Stagecoach Ln. and Alvarado St.	F	61.7	F	62.2	Yes
Stagecoach Ln. and Fallbrook St.	F	71	F	71.4	Yes
Stagecoach Ln. and Reche Rd.	F	100.4	F	101.4	Yes
Stagecoach Ln. and S. Mission Road.	C	21.7	C	21.7	No
Live Oak Park Rd. and Reche Rd.	B	14.7	B	14.8	No
Main Ave. and Fallbrook St.	D	38.5	D	38.6	No
S. Mission Rd. and Fallbrook St.	C	30.7	C	30.8	No
Fallbrook St. and Reche Rd. (Project Access)	F	61.7	F	63.2	Yes
<b>P.M. Peak Hour</b>					
E. Mission Road and I-15 NB Ramps	F	>250.0	F	>250.0	Yes
E. Mission Road and I-15 SB Ramps	F	67	F	68.3	Yes
E. Mission Road and Old Hwy 395	F	>250.0	F	>250.0	Yes
E. Mission Road and Live Oak Park Rd.	F	56.7	F	57	Yes
E. Mission Road and Stagecoach Ln.	E	69.9	E	70.1	Yes
Stagecoach Ln. and Alvarado St.	D	35	E	35.4	Yes
Stagecoach Ln. and Fallbrook St.	F	59.2	F	59.9	Yes
Stagecoach Ln. and Reche Rd.	F	66.1	F	67.3	Yes
Stagecoach Ln. and S. Mission Road.	B	15.2	B	15.2	No
Live Oak Park Rd. and Reche Rd.	C	22.6	C	22.7	No
Main Ave. and Fallbrook St.	E	77	E	77.2	Yes
S. Mission Rd. and Fallbrook St.	D	43.5	D	43.7	No
Fallbrook St. and Reche Rd. (Project Access)	D	33.6	D	34.4	No

\* All significant impacts are cumulative impacts.





## 7.0 Summary of Impacts

The proposed project is an 8 unit large-lot residential home project (one of which is already built) located within the Fallbrook area of San Diego County. The project would take access from Fallbrook Street with regional access available at the intersection of Fallbrook Street and Reche Road. The proposed project would add 84 trips to the circulation network, with 7 occurring in the AM peak hour and 8 during PM peak hour.

### ***Construction Impacts***

It is not estimated that the project will require any street closures during construction. In addition, construction impacts on the area are projected to be minimal since construction vehicles are estimated to contribute fewer vehicles during the peak hours than the project would after completion.

### ***Existing Conditions***

The analysis of existing roadway segment conditions analysis found that all of the study segments on Mission Road are operating at LOS F and the segment of Fallbrook Street from Stagecoach Lane to Main Avenue is operating at LOS E. In addition, the segment of Stagecoach Ln from Fallbrook St. to Reche Rd. is operating at LOS E.

The analysis of the existing intersections operations found that only the four intersections of Stagecoach/S. Mission, Live Oak Park/Reche, S. Mission/Fallbrook and Fallbrook/Reche operate at LOS D or better under existing AM and PM peak. The other 9 intersections operate at LOS E or F in either the AM or PM peaks.

### ***Existing Plus Project Conditions***

Based on the thresholds set in Table 1, the project would have no direct impacts at any of the roadway segments or intersections. Therefore, the existing plus project scenario was not analyzed.

### ***Near-Term Cumulative Conditions***

The cumulative analysis takes into account existing traffic volumes plus the traffic associated with other planned developments in the study area. There are a total of 32 cumulative projects that were analyzed for this study based on the approved "Crest (TM 5195)" subdivision study. A growth factor of 25% was also applied to the traffic volumes associated with these cumulative projects in order to anticipate the cumulative project growth between 2002 and 2004 and any additional permits that may be given between the submittal of this study and the hearing date of the project.

**Cumulative Roadway Segment Impact:** The near-term cumulative plus project analysis revealed that the project, along with other cumulative projects, contributes more than 100 vehicles to LOS F 2-lane roadway segments or 200 vehicles to LOS E 2-lane roadway segments of:

1. Mission Road – I-15 to Old Hwy 395 (LOS F)
2. Mission Road – Old Hwy 395 to Live Oak Park (LOS F)
3. Mission Road – Live Oak Park to Hamilton Ln. (LOS F)
4. Mission Road – Hamilton Ln. to Stagecoach Ln. (LOS F)
5. Stagecoach Lane – Fallbrook St. to Reche Rd. (LOS E)



6. Fallbrook Street – Stagecoach Ln. to Main Ave.

Therefore, the project is considered cumulatively considerable on these roadway segments.

**Cumulative Intersection Impact:** Under the near-term plus project scenario, the cumulative projects (including the Beaver Creek project) collectively contribute more than 1 second of delay or 5 peak hour trips on a critical movement to the intersections of:

1. E. Mission Road and I-15 NB Ramps (AM and PM Peak Hours)
2. E. Mission Road and I-15 SB Ramps (AM and PM Peak Hours)
3. E. Mission Road and Old Hwy 395 (AM and PM Peak Hours)
4. E. Mission Road and Live Oak Park Rd. (AM and PM Peak Hours)
5. E. Mission Road and Stagecoach Ln. (PM Peak Hour)
6. Stagecoach Ln. and Alvarado St. (AM and PM Peak Hours)
7. Stagecoach Ln. and Fallbrook St. (AM and PM Peak Hours)
8. Stagecoach Ln. and Reche Rd. (AM and PM Peak Hours)
9. Main Ave. and Fallbrook St. (PM Peak Hour)
10. Fallbrook St. and Reche Rd. (AM Peak Hour)

Therefore, the project is considered to be a part of a significant cumulative impact at these intersections.

**Project Mitigation:**

The project's impacts to the E. Mission Road and I-15 NB and SB Ramps (the I-15/East Mission Road Interchange) are indirect impacts and will be mitigated by the developer, before a final map is approved, by either: 1) paying the additional Transportation Impact Fee (TIF) associated with freeway ramps as adopted by the Board of Supervisors to include improvements to the E. Mission Road / I-15 interchange to the satisfaction of the Director of Public Works (the County's TIF program does not currently include the E. Mission Road / I-15 interchange. There is no guarantee when or if the Board of Supervisors will adopt these ramps into the TIF, so there is no guarantee paying into the TIF will be an option for mitigating impacts to these ramps. Also, if the E. Mission Road / I-15 interchange improvements are adopted into the RIF, the RIF cost for these improvements are currently unknown and could be very high); or 2) constructing improvements to the E. Mission Road / I-15 interchange in proportion to the project's impacts to these facilities to the satisfaction of the Director of Public Works and Caltrans.

To mitigate the project's impact on all other roadway segments and intersections identified above, the developer will be responsible for making a contribution to the County's Traffic Impact Fee (TIF) program, which was passed by the County Board of Supervisors on April 13, 2005.

In order for the TIF program to mitigate the cumulative impacts, each affected roadway segment and intersection must be identified in the TIF program facility list. Each of the roadway segments and intersections identified in this study, which require mitigation are shown in Table 8 with their corresponding Fallbrook TIF Program Facility ID Number.

The project may also mitigate its cumulative impacts through the construction and dedication of Fallbrook Street within the project site since the extension of Fallbrook Street is included under the Traffic Impact Fee program (Program Facility ID Number AO1 – Fallbrook Street from Stage Coach Lane to Reche Road). Dedication of Fallbrook Street within the project site should also include 12-foot of additional dedications on each side of Fallbrook Street as well as frontage improvements, as indicated



in the Site Plan (Figure 3). Should the total of the construction and dedication of Fallbrook Street, within the project site, be higher than the project's TIF amount, the developer could be eligible for a refund under the TIF program. However, if the total cost of construction and dedication were less than the developer's TIF amount, the developer would be responsible for the difference between the roadway improvement costs and the TIF.



**Table 8**  
**Roadway Segment and Intersection With TIF Facility ID Number**

<i>Study Roadway Segments</i>	<i>Fallbrook TIF Facility ID Number</i>
Mission Road – I-15 to Old Hwy 395	CO2
Mission Road – Old Hwy 395 to Live Oak Park	CO2
Mission Road – Live Oak Park to Hamilton Ln.	CO2
Mission Road – Hamilton Ln. to Stagecoach Ln.	CO2
Stagecoach Lane – Fallbrook St. to Reche Rd.	CO5
Fallbrook Street – Stagecoach Ln. to Main Ave.	CO5
<i>Study Intersections</i>	<i>Fallbrook TIF Facility ID Number</i>
E. Mission Road and Old Hwy 395	A13
E. Mission Road and Live Oak Park Rd.	BO2
E. Mission Road and Stagecoach Ln.	CO2
Stagecoach Ln. and Alvarado St.	A04
Stagecoach Ln. and Fallbrook St.	A05
Stagecoach Ln. and Reche Rd.	A06
Main Ave. and Fallbrook St.	CO4
Fallbrook St. and Reche Rd.	A15

As shown in Table 8 above, each of the identified segments and intersections have been identified in the Fallbrook Traffic Impact Fee program and will be covered through the Traffic Impact Fee program.



## 8.0 Recommendations

Katz, Okitsu & Associates recommend the following:

Cumulative impacts, of which the Beaver Creek project is a part of, were found at the following roadway segments and intersections.

### Roadway Segments:

1. Mission Road – I-15 to Old Hwy 395 (LOS F)
2. Mission Road – Old Hwy 395 to Live Oak Park (LOS F)
3. Mission Road – Live Oak Park to Hamilton Ln. (LOS F)
4. Mission Road – Hamilton Ln. to Stagecoach Ln. (LOS F)
5. Stagecoach Lane – Fallbrook St. to Reche Rd. (LOS E)
6. Fallbrook Street – Stagecoach Ln. to Main Ave.

### Intersections:

1. E. Mission Road and I-15 NB Ramps (AM and PM Peak Hours)
2. E. Mission Road and I-15 SB Ramps (AM and PM Peak Hours)
3. E. Mission Road and Old Hwy 395 (AM and PM Peak Hours)
4. E. Mission Road and Live Oak Park Rd. (AM and PM Peak Hours)
5. E. Mission Road and Stagecoach Ln. (PM Peak Hour)
6. Stagecoach Ln. and Alvarado St. (AM and PM Peak Hours)
7. Stagecoach Ln. and Fallbrook St. (AM and PM Peak Hours)
8. Stagecoach Ln. and Reche Rd. (AM and PM Peak Hours)
9. Main Ave. and Fallbrook St. (PM Peak Hour)
10. Fallbrook St. and Reche Rd. (AM Peak Hour)

To mitigate the project impact on these roadway segments and intersections, the developer will be responsible for making a contribution to the County's Traffic Impact Fee (TIF) program, which was passed by the County Board of Supervisors on April 13, 2005. Each of the roadway segments and intersection found to require mitigation has been identified in the TIF program facilities list.

The project may also mitigate its cumulative impacts through the construction and dedication of Fallbrook Street within the project site since the extension of Fallbrook Street is included under the Traffic Impact Fee program (Program Facility ID Number A01 – Fallbrook Street from Stage Coach Lane to Reche Road). Dedication of Fallbrook Street within the project site should also include 12-foot of additional dedications on each side of Fallbrook Street as well as frontage improvements, as indicated in the Site Plan (Figure 3).



Should the total of the construction and dedication of Fallbrook Street, within the project site, be higher than the project's TIF amount, the developer could be eligible for a refund under the TIF program. However, if the total cost of construction and dedication were less than the developer's TIF amount, the developer would be responsible for the difference between the roadway improvement costs and the TIF.

## **9.0 Response to Comments Regarding Prior Report**

The following section was prepared in response to comments received from the County of San Diego regarding a prior version of this report, which was prepared and submitted to the County in December of 2004 (hereinafter, the "December 2004 Report").

The Department of Public Works reviewed a Traffic Impact Analysis prepared by Katz, Okitsu & Associates and a Tentative Map prepared by Patrick W. Harrison, which were submitted on November 4, 2005. A letter to Patrick W. Harrison from the County of San Diego dated December 19, 2005 contained five comments regarding the traffic impact analysis. A response to these comments was provided by Katz, Okitsu & Associates to the Regulatory Planning Division in a letter dated January 6, 2006. This section also memorializes the results of a meeting between the applicant and County Staff held on June 6, 2006, which further established the applicant's response to the County's comments regarding the traffic impact analysis. Finally, two additional comments regarding the traffic impact analysis were received by email and in a letter to Patrick Harrison dated December 15, 2006. These two additional comments are also addressed below.

Each comment shall be reiterated below, and will be followed by a response.

**Comment 1.** The TIS has recommended that the project contribute to the County's TIF program in order to mitigate the project's cumulative impacts. The applicant should coordinate with DPLU staff in order to document that they agree to participate in the TIF program and to finalize the environmental documentation.

**Response:** The applicant met with County Staff on June 6, 2006 to discuss the County's TIF program. The applicant agreed to complete all necessary documentation to participate in the TIF program and to finalize the environmental documentation.

**Comment 2.** The TIA discusses the option of the proposed project constructing and dedicating the onsite segment of Fallbrook Street and its eligibility for a TIF fee credit. The project applicant/consultant should submit a report on the cost of improvements to Fallbrook Street and requested project TIF fee credit to demonstrate net payment to the satisfaction of DPW, prior to building permit applications.

**Response:** The applicant met with County Staff on June 6, 2006 to discuss its eligibility for a TIF fee credit. The applicant agreed to complete all necessary documentation to substantiate the cost of improvements to the onsite segment of Fallbrook Street for the purpose of making an application for a project TIF fee credit. The applicant agrees to make net payment to the satisfaction of DPW as a condition to its building permit applications.

**Comment 3.** Page 26 of the TIA states that if costs of improving Fallbrook Street exceed his TIF fee, the applicant may be entitled to a refund. This would only be an option if the applicant enters into a reimbursement agreement with the County.



Response: The applicant met with County Staff on June 6, 2006 to discuss its eligibility for a TIF fee credit. The applicant agreed to complete all necessary documentation to substantiate the cost of improvements to the onsite segment of Fallbrook Street for the purpose of entering into a reimbursement agreement with the County in the event that the costs of such improvements exceed the amount of the applicant's TIF fee.

Comment 4. The project's conditions include improvements to Fallbrook Street, a copy of the preliminary striping and signing plan should be submitted to the DPW Traffic section for their review and comments.

Response: A striping and signing plan has been prepared and is being submitted with this revised Traffic Impact Study.

Comment 5. This comment requires that County DPLU and DPW staff meet with the applicant. Beaver Creek Lane is identified as a private easement that will eventually connect Fallbrook Street to Alvarado Street, which are two public roads. The purpose of a meeting would be to discuss the possibility of Beaver Creek Lane being converted to a public road in order to enhance road connectivity after the Fallbrook Street extension is completed. It should be noted that changing the private road status of Beaver Creek Lane would involve other properties besides the TM 5243 project site. Staff will contact you to schedule a meeting.

Response: The applicant met with County Staff on June 6, 2006. At that meeting it was agreed that Beaver Creek Lane will remain a private roadway.

In addition to the foregoing comments, two additional comments were received from the County of San Diego (by email from Jerry Moriarity to Katz, Okitsu & Associates, Mark Greany, and then again in a letter to Patrick Harrison dated December 15, 2006). Each comment shall be reiterated below, and will be followed by a response.

Comment 1. The site has frontage along a circulation element street, report shall indicate what the GP2020 circulation element requirements are for this road.

Response: The site has frontage along the proposed circulation element roadway E. Fallbrook Street extension (SF 1416) according to the General Plan 2020 Proposed Changes, August 2, 2006, Attachment C, Community Summaries, Maps and Matrices, which was endorsed by the County Board of Supervisors on August 2, 2006. This document identifies the Fallbrook Street extension as Segment 7B, which is to be constructed from Stage Coach Lane to Reche Road. This segment does not currently exist. When completed, the roadway will be classified as a 2 Lane Rural Collector, with an equivalent classification of 2.2E Light Collector 2 Lanes. According to Attachment E to the General Plan 2020 Proposed Changes, this classification of roadway does not require any road components (such as a median or turn lanes) and is similar to existing Rural Light Collectors. The required minimum right of way for this classification of roadway is 64 feet, and it has a threshold capacity of 10,900 ADT. The proposed striping and signing plan submitted with this report shows the location of the required right of way for the ultimate build out of this roadway segment.

Comment 2: The TIA should discuss how the County's adopted guidelines (9-26-06) (Table 3) are used to determine if a project's potential traffic impacts would be perceptible to the average driver.

Response: The original traffic impact study identified potential traffic impacts using the County of San Diego significance criteria that were in effect at the time the report was submitted. The County of San Diego has since formally adopted the significance criteria for determining project impacts in the



Guidelines for Determining Significance and Report Format and Content Requirements, dated September 26, 2006 (hereinafter, the "September 26, 2006 Guidelines").

The December 2004 Report used the same criteria for significance that was formally adopted in the September 26, 2006 Guidelines in the analysis of the Beaver Creek project's potential impacts. See Table 1, Measures of Significant Project Impacts to Congestion (which combines the standards presented in Tables 1 and 2 in the September 26, 2006 Guidelines). More specifically, with respect to the determination of whether the project's potential traffic impacts would be perceptible to the average driver, the December 2004 Report forecasted a trip generation of 84 ADT, with 7 trips in the AM Peak Hour and 8 trips in the PM Peak Hour.

The trip generation for the Beaver Creek project does not result in changes to traffic flow that would be noticeable to the average driver, and therefore does not constitute a significant impact on the roadways. With respect to segments operating at LOS E, the September 26, 2006 Guidelines state "an impact from new development on an LOS E road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 200 ADT." The September 26, 2006 Guidelines elaborate by stating that "On average, during peak hour conditions, this would be only one additional car every 2.4 minutes. Therefore, the addition of 200 ADT, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway." Since the Beaver Creek trip generation is 84 ADT the additional traffic will not be noticeable to the average driver, and therefore does not constitute a significant impact on roadway segments operating at LOS E.

Similarly, with respect to segments operating at LOS F, the September 26, 2006 Guidelines state "an impact from new development on an LOS E road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 100 ADT." The September 26, 2006 Guidelines elaborate by stating that "On average, during peak hour conditions, this would be only one additional car every 4.8 minutes. The addition of 100 ADT, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway." Since the Beaver Creek trip generation is 84 ADT the additional traffic will not be noticeable to the average driver, and therefore does not constitute a significant impact on roadway segments operating at LOS F.

Sincerely,

**Katz, Okitsu & Associates**

J. Arnold Torma, P.E.  
Principal Engineer





## **Appendix A**

**Level of Service Concepts  
Analysis Methodologies  
Standards of Significance**



**Table A-1**  
**San Diego County Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)**

<i>Street Classification</i>	<i>Lanes</i>	<i>Maximum Recommended ADT by LOS</i>				
		<i>A Freeflow</i>	<i>B Steady flow</i>	<i>C Stable flow</i>	<i>D Approach unstable</i>	<i>E Unstable flow</i>
Expressway	6	36,000	54,000	70,000	86,000	108,000
Prime	6	22,200	37,000	44,600	50,000	57,000
Major	4	14,800	24,700	29,600	33,400	37,000
Collector	4	13,700	22,800	27,400	30,800	34,200
Town Collector	3	3,000	6,000	9,500	13,500	19,000
Collector	2	1,900	4,100	7,100	10,900	16,200



**Table A-2**  
**Roadway Segment Level of Service Definitions**

The concept of LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. Levels of service for arterial segments with a range of free-flow speeds can generally be categorized as follows:

LOS	Class I	Class II	Class III	Class IV	LOS Characteristic
	(55 to 45 mph)	(45-35 mph)	(35 to 30)	(35 to 25)	
"A"	>42	>35	>30	>25	Speeds 90% of free-flow speed, minimal stopped delay
"B"	>34	>28	>24	>19	Speeds 70% of free-flow speed, delay not bothersome
"C"	>27	>22	>18	>13	Speeds 50% of free-flow speed, longer queues, noticeable delay
"D"	>21	>17	>14	>9	Speeds 40% of free-flow, substantial delay.
"E"	>16	>13	>10	>7	Speeds 30% of free-flow, high delay.
"F"	≤16	≤13	≤10	≤7	Speeds 25% of free-flow, high delay, extensive queuing

Source- HCM 2000, Chapter 15



**Table A-3**  
**Signalized Intersection Level of Service**  
**Highway Capacity Manual Operational Analysis Method**

The operational analysis method for evaluation of signalized intersections presented in the 2000 Highway Capacity Manual (Transportation Research Board Special Report 209) defines level of service in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption, and lost travel time.

<b>Average Stopped Delay Per Vehicle (seconds)</b>	<b>Level of Service (LOS) Characteristics</b>
<10	<i>LOS A</i> describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10 - 20.0	<i>LOS B</i> describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for <i>LOS A</i> , causing higher levels of average delay.
20.1 - 35.0	<i>LOS C</i> describes operations with higher delays which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 - 55.0	<i>LOS D</i> describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 - 80.0	<i>LOS E</i> is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	<i>LOS F</i> describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

SOURCE: 2000 Highway Capacity Manual



## **Appendix B**

### **Existing Counts**

Traffic Data Service Southwest  
 9773 Maine Avenue  
 Lakeside, CA 92040  
 (619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry  
 Counted by: C.Parish  
 Board # : D1-1426  
 Location : Mission Rd @ Fallbrook St

File Name : 04393010  
 Site Code : 00393010  
 Start Date : 11/10/2004  
 Page No : 1

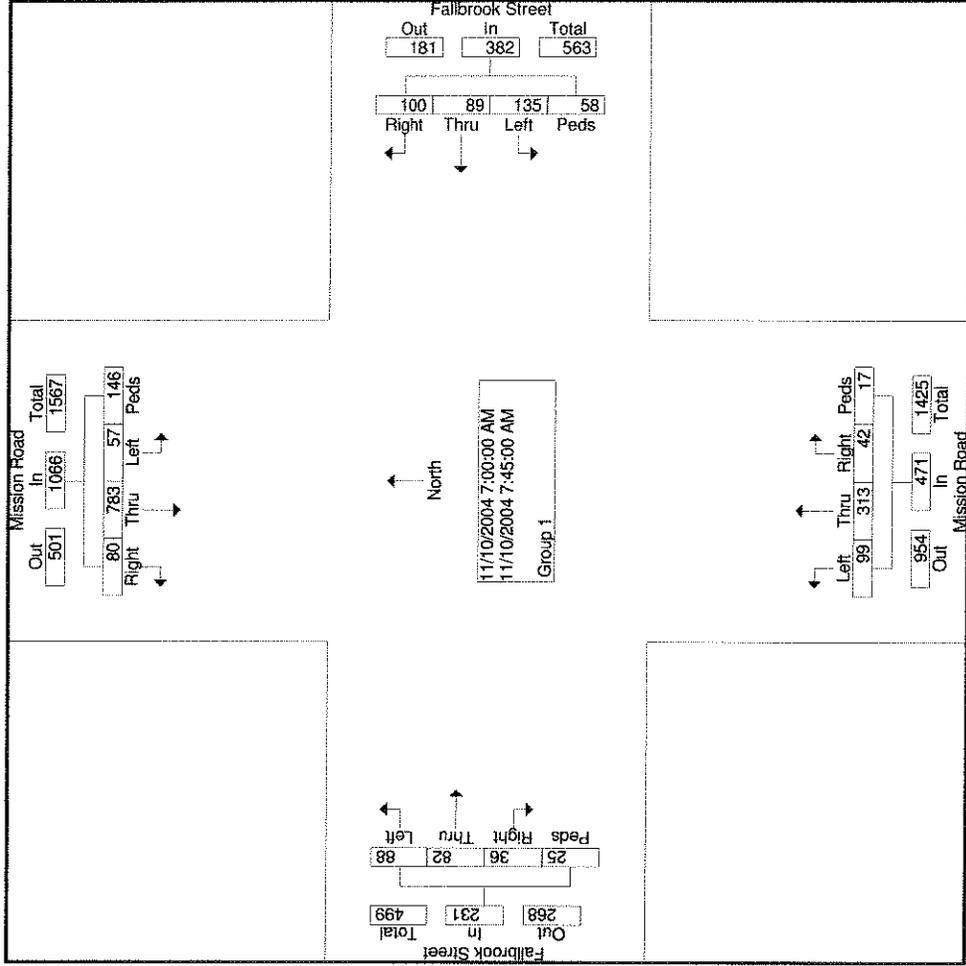
Groups Printed- Group 1

Start Time	Mission Road Southbound				Fallbrook Street Westbound				Mission Road Northbound				Fallbrook Street Eastbound								
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:00	9	204	36	42	291	36	16	21	16	89	6	43	9	0	58	21	19	9	4	53	491
07:15	9	229	21	42	301	29	15	12	20	76	10	70	6	10	96	24	17	11	3	55	528
07:30	13	195	10	40	258	29	25	35	14	103	31	93	13	5	142	11	21	8	12	52	555
07:45	26	155	13	22	216	41	33	32	8	114	52	107	14	2	175	32	25	8	6	71	576
Total	57	783	80	146	1066	135	89	100	58	382	99	313	42	17	471	88	82	36	25	231	2150
08:00	25	155	9	13	202	45	20	15	8	88	10	73	11	1	95	22	31	9	1	63	448
08:15	18	149	8	0	175	47	14	18	0	79	5	77	17	0	99	18	16	5	2	41	394
08:30	3	132	10	0	145	59	12	8	0	79	2	68	11	1	82	12	25	5	1	43	349
08:45	9	127	4	5	145	47	2	13	0	62	4	67	17	1	89	10	16	7	4	37	333
Total	55	563	31	18	667	198	48	54	8	308	21	285	56	3	365	62	88	26	8	184	1524
Grand Total	112	1346	111	164	1733	333	137	154	66	690	120	598	98	20	836	150	170	62	33	415	3674
Approch %	6.5	77.7	6.4	9.5	48.3	19.9	22.3	4.2	9.6	14.4	71.5	11.7	2.4	22.8	36.1	41.0	14.9	8.0	8.0	11.3	
Total %	3.0	36.6	3.0	4.5	47.2	9.1	3.7	4.2	1.8	18.8	3.3	16.3	2.7	0.5	4.1	4.6	1.7	0.9	0.9		

Start Time	Mission Road Southbound				Fallbrook Street Westbound				Mission Road Northbound				Fallbrook Street Eastbound								
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																					
Intersection	57	783	80	146	1066	135	89	100	58	382	99	313	42	17	471	88	82	36	25	231	2150
Volume	5.3	73.5	7.5	13.7	35.3	23.3	26.2	32	15.2	21.0	66.5	8.9	3.6	38.1	35.5	15.6	10.8	6	71	0.933	
07:45 Volume	26	155	13	22	216	41	33	32	8	114	52	107	14	2	175	32	25	8	6	71	576
Peak Factor	0.715				0.745					0.745					0.745					0.813	
High Int. Volume	9	229	21	42	301	41	33	32	8	114	52	107	14	2	175	32	25	8	6	71	576
Peak Factor					0.885					0.838					0.673					0.813	

Traffic Data Service Southwest  
 9773 Maine Avenue  
 Lakeside, CA 92040  
 (619) 390-8495 Fax (619) 390-8427

File Name : 04393010  
 Site Code : 00393010  
 Start Date : 11/10/2004  
 Page No : 2



**Traffic Data Service Southwest**  
 9773 Maine Avenue  
 Lakeside, CA 92040  
 (619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry  
 Counted by: C.Parish  
 Board # : D1-1426  
 Location : Mission Rd @ Fallbrook St

File Name : 04393011  
 Site Code : 00393011  
 Start Date : 11/10/2004  
 Page No : 1

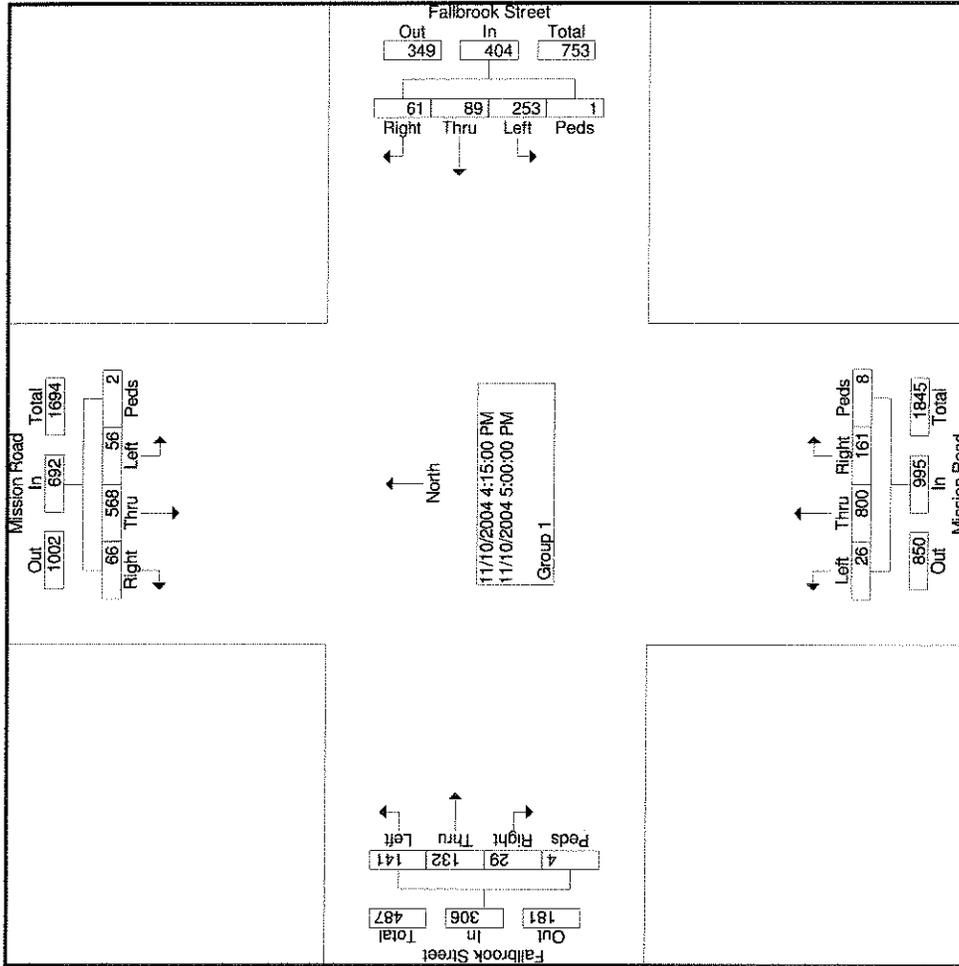
Groups Printed- Group 1

Start Time	Mission Road Southbound				Fallbrook Street Westbound				Mission Road Northbound				Fallbrook Street Eastbound								
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	14	106	15	3	138	54	14	15	0	83	3	186	40	0	209	39	32	7	1	79	509
16:15	15	136	17	0	168	77	25	11	1	114	8	198	34	2	242	46	32	13	0	91	615
16:30	13	150	18	1	182	63	14	16	0	93	4	223	45	3	275	44	34	2	1	81	631
16:45	13	143	15	1	172	60	26	19	0	105	5	173	44	3	225	43	40	7	2	72	574
Total	55	535	65	5	660	254	79	61	1	395	20	760	163	8	951	152	138	29	4	323	2329
17:00	15	139	16	0	170	53	24	15	0	92	9	206	38	0	253	28	26	7	1	62	577
17:15	16	105	14	3	138	59	22	16	0	97	4	185	36	5	230	24	25	3	5	57	522
17:30	9	99	23	0	131	55	30	13	0	98	4	128	45	3	180	23	15	7	0	45	454
17:45	9	119	17	2	147	45	19	10	1	75	4	146	37	0	187	17	16	4	1	38	447
Total	49	482	70	5	586	212	95	54	1	362	21	665	156	8	850	92	82	21	7	202	2000
Grand Total	104	997	135	10	1246	466	174	115	2	757	41	1425	319	16	1801	244	220	50	11	525	4329
Approch %	8.3	80.0	10.8	0.8		61.6	23.0	15.2	0.3		2.3	79.1	17.7	0.9		46.5	41.9	9.5	2.1		
Total %	2.4	23.0	3.1	0.2	28.8	10.8	4.0	2.7	0.0	17.5	0.9	32.9	7.4	0.4	41.6	5.6	5.1	1.2	0.3	12.1	

Start Time	Mission Road Southbound				Fallbrook Street Westbound				Mission Road Northbound				Fallbrook Street Eastbound								
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																					
Intersection 16:15																					
Volume	56	568	66	2	692	253	89	61	1	404	26	800	161	8	995	141	132	29	4	306	2397
Percent	8.1	82.1	9.5	0.3		62.6	22.0	15.1	0.2		2.6	80.4	16.2	0.8		46.1	43.1	9.5	1.3		
16:30 Volume	13	150	18	1	182	63	14	16	0	93	4	223	45	3	275	44	34	2	1	81	631
Peak Factor																					0.950
High Int. 16:30																					
Volume	13	150	18	1	182	77	25	11	1	114	4	223	45	3	275	16:15	46	32	13	0	91
Peak Factor					0.951					0.886					0.905						0.841

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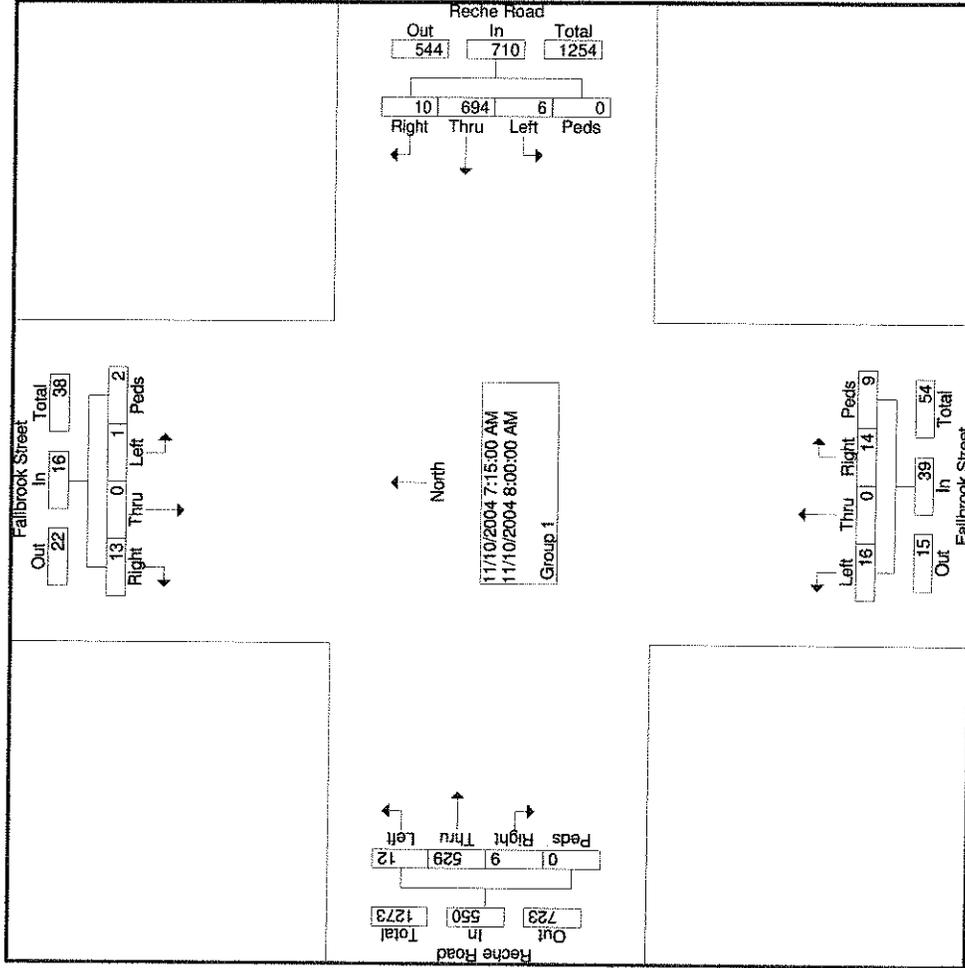
File Name : 04393011  
 Site Code : 00393011  
 Start Date : 11/10/2004  
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Traffic Data Service Southwest  
 9773 Maine Avenue  
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File Name : 04393020  
 Site Code : 00393020  
 Start Date : 11/10/2004  
 Page No : 2



Traffic Data Service Southwest  
 9773 Maine Avenue  
 Lakeside, CA 92040  
 (619) 390-8495 Fax (619) 390-8427

Weather : Clear & Dry  
 Counted by: S.Tillman  
 Board # : D1-1424

File Name : 04393021  
 Site Code : 00393021  
 Start Date : 11/10/2004  
 Page No : 1

Location : Fallbrook St @ Reche Rd

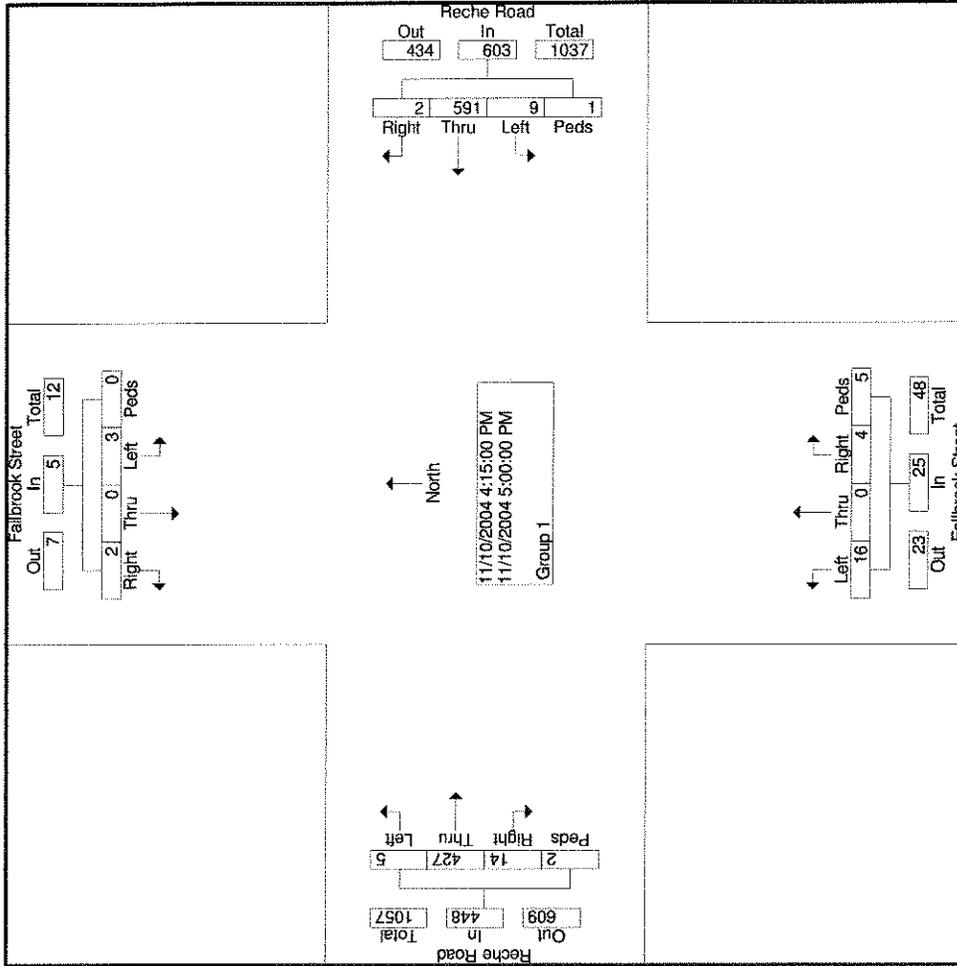
Groups Printed- Group 1

Start Time	Fallbrook Street Southbound				Reche Road Westbound				Fallbrook Street Northbound				Reche Road Eastbound								
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
16:00	0	0	2	0	2	3	113	2	0	118	2	0	1	0	3	3	115	6	0	124	247
16:15	0	0	0	0	0	3	131	0	0	134	5	0	2	0	7	0	109	4	1	114	255
16:30	0	0	0	0	0	0	161	1	1	163	4	0	0	4	8	1	100	4	1	106	277
16:45	3	0	1	0	4	3	164	0	0	167	2	0	1	0	3	2	119	2	0	123	297
Total	3	0	3	0	6	9	569	3	1	582	13	0	4	4	21	6	443	16	2	467	1076
17:00	0	0	1	0	1	3	135	1	0	139	5	0	1	1	7	2	99	4	0	105	252
17:15	0	0	1	2	3	2	104	0	0	106	1	0	1	1	3	2	110	2	0	114	226
17:30	0	0	0	0	0	1	110	1	0	112	4	0	2	0	6	0	80	6	0	86	204
17:45	2	0	0	0	2	2	112	0	0	114	3	0	1	0	4	0	76	4	0	80	200
Total	2	0	2	2	6	8	461	2	0	471	13	0	5	2	20	4	365	16	0	385	882
Grand Total	5	0	5	2	12	17	1030	5	1	1053	26	0	9	6	41	10	808	32	2	852	1958
Approch %	41.7	0.0	41.7	16.7		1.6	97.8	0.5	0.1		63.4	0.0	22.0	14.6		1.2	94.8	3.8	0.2		
Total %	0.3	0.0	0.3	0.1	0.6	0.9	52.6	0.3	0.1	53.8	1.3	0.0	0.5	0.3	2.1	0.5	41.3	1.6	0.1	43.5	

Start Time	Fallbrook Street Southbound				Reche Road Westbound				Fallbrook Street Northbound				Reche Road Eastbound									
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																						
Intersection 16:15	3	0	2	0	5	9	591	2	1	603	16	0	4	5	25	5	427	14	2	448	1081	
Volume Percent	60.0	0.0	40.0	0.0		1.5	98.0	0.3	0.2		64.0	0.0	16.0	20.0		1.1	95.3	3.1	0.4			
16:45 Volume Peak Factor	3	0	1	0	4	3	164	0	0	167	2	0	1	0	3	2	119	2	0	123	297	
High Int. 16:45						16:45				16:30					16:45							0.910
Volume Peak Factor	3	0	1	0	0.313	3	164	0	0	0.903	4	0	0	4	0.781	2	119	2	0	123	297	

Traffic Data Service Southwest  
 9773 Maine Avenue  
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File Name : 04393021  
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 Start Date : 11/10/2004  
 Page No : 2





**Katz, Okitsu & Associates**  
*Traffic Engineers and Transportation Planners*

---

## **Appendix C**

### **SANDAG Trip Generation Manual**

(NOT SO)

# BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION



401 B Street, Suite 800  
San Diego, California 92101  
(619) 699-1900 • Fax (619) 699-1950

APRIL 2002

NOTE: This listing only represents a *guide of average*, or estimated, traffic generation "driveway" rates and some very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual. *Always check with local jurisdictions for their preferred or applicable rates.*

LAND USE	TRIP CATEGORIES (PRIMARY:DIVERTED:PASS-BY) <sup>1</sup>	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio)				TRIP LENGTH (Miles) <sup>2</sup>
			Between 6:00-9:30 A.M.		Between 3:00-6:30 P.M.		
<b>AGRICULTURE</b> (Open Space) .....	[80:18:2]	2/acre**					10.8
<b>AIRPORT</b> .....	[78:20:2]						12.5
Commercial		60/acre, 100/flight, 70/1000 sq. ft. **	5%	(6:4)	6%	(5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft **	9%	(7:3)	15%	(5:5)	
Heliports		100/acre**					
<b>AUTOMOBILES</b>							
Car Wash							
Automatic		900/site, 600/acre**	4%	(5:5)	9%	(5:5)	
Self-serve		100/washstall**	4%	(5:5)	8%	(5:5)	
Gasoline .....	[21:51:28]						2.8
with/Food Mart		160/vehicle fueling space**	7%	(5:5)	8%	(5:5)	
with/Food Mart & Car Wash		155/vehicle fueling space**	8%	(5:5)	9%	(5:5)	
Older Service Station Design		150/vehicle fueling space, 900/station**	7%	(5:5)	9%	(5:5)	
Sales (Dealer & Repair)		50/1000 sq. ft., 300/acre, 60/service stall* **	9%	(7:3)	8%	(4:6)	
Auto Repair Center		20/1000 sq. ft., 400/acre, 20/service stall *	8%	(7:3)	11%	(4:6)	
Auto Parts Sales		60/1000 sq. ft. **	4%		10%		
Quick Lube		40/service stall**	7%	(6:4)	10%	(5:5)	
Tire Store		25/1000 sq. ft., 30/service stall**	7%	(6:4)	11%	(5:5)	
<b>CEMETERY</b>		5/acre*					
<b>CHURCH</b> (or Synagogue) .....	[64:25:11]	9/1000 sq. ft., 30/acre** (quadruple rates for Sunday, or days of assembly)	9%	(6:4)	8%	(5:5)	5.1
<b>COMMERCIAL/RETAIL</b> <sup>5</sup>							
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3+ major stores)		35/1000 sq. ft., <sup>c</sup> 400/acre*	4%	(7:3)	10%	(5:5)	
Regional Shopping Center (40-80 acres, 400,000-800,000 sq. ft., w/usually 2+ major stores)	[54:35:11]	50/1000 sq. ft., <sup>c</sup> 500/acre*	4%	(7:3)	9%	(5:5)	5.2
Community Shopping Center (15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)	[47:31:22]	80/1000 sq. ft., 700/acre* **	4%	(6:4)	10%	(5:5)	3.6
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & fast food services)		120/1000 sq. ft., 1200/acre* **	4%	(6:4)	10%	(5:5)	
Commercial Shops .....	[45:40:15]						4.3
Specialty Retail/Strip Commercial		40/1000 sq. ft., 400/acre*	3%	(6:4)	9%	(5:5)	
Electronics Superstore		50/1000 sq. ft.**			10%	(5:5)	
Factory Outlet		40/1000 sq. ft.**	3%	(7:3)	9%	(5:5)	
Supermarket		150/1000 sq. ft., 2000/acre* **	4%	(7:3)	10%	(5:5)	
Drugstore		90/1000 sq. ft.**	4%	(6:4)	10%	(5:5)	
Convenience Market (15-16 hours)		500/1000 sq. ft.**	8%	(5:5)	7%	(5:5)	
Convenience Market (24 hours)		700/1000 sq. ft.**	8%	(5:5)	7%	(5:5)	
Convenience Market (w/gasoline pumps)		850/1000 sq. ft., 550/vehicle fueling space**	8%	(5:5)	7%	(5:5)	
Discount Club		60/1000 sq. ft., 600/acre* **	7%	(7:3)	9%	(5:5)	
Discount Store		60/1000 sq. ft., 600/acre**	3%	(6:4)	8%	(5:5)	
Furniture Store		5/1000 sq. ft., 100/acre**	4%	(7:3)	9%	(5:5)	
Lumber Store		30/1000 sq. ft., 150/acre**	7%	(6:4)	9%	(5:5)	
Home Improvement Superstore		40/1000 sq. ft.**	5%	(6:4)	8%	(5:5)	
Hardware/Paint Store		60/1000 sq. ft., 600/acre**	2%	(6:4)	9%	(5:5)	
Garden Nursery		40/1000 sq. ft., 90/acre**	3%	(6:4)	10%	(5:5)	
Mixed Use: Commercial (w/supermarket)/Residential		110/1000 sq. ft., 2000/acre* (commercial only) 150/1000 sq. ft., 2000/acre* (residential only)	3%	(6:4)	9%	(5:5)	
			9%	(3:7)	13%	(6:4)	
<b>EDUCATION</b>							
University (4 years) .....	[91:9:0]	2.4/student, 100 acre*	10%	(8:2)	9%	(3:7)	8.9
Junior College (2 years) .....	[92:7:1]	1.2/student, 24/1000 sq. ft., 120/acre* **	12%	(8:2)	9%	(6:4)	9.0
High School .....	[75:19:6]	1.3/student, 16/1000 sq. ft., 60/acre* **	20%	(7:3)	10%	(4:6)	4.8
Middle/Junior High .....	[63:25:12]	1.4/student, 12/1000 sq. ft., 50/acre**	30%	(6:4)	9%	(4:6)	5.0
Elementary .....	[57:25:10]	1.6/student, 14/1000 sq. ft., 90/acre* **	32%	(6:4)	9%	(4:6)	3.4
Day Care .....	[28:58:14]	5/child, 80/1000 sq. ft.**	17%	(5:5)	18%	(5:5)	3.7
<b>FINANCIAL</b> <sup>5</sup> .....	[35:42:23]						3.4
Bank (Walk-In only)		150/1000 sq. ft., 1000/acre***	4%	(7:3)	8%	(4:6)	
with Drive-Through		200/1000 sq. ft., 1500/acre*	5%	(6:4)	10%	(5:5)	
Drive-Through only		250 (125 one-way)/lane*	3%	(5:5)	13%	(5:5)	
Savings & Loan		60/1000 sq. ft., 600/acre**	2%		9%		
Drive-Through only		100 (50 one-way)/lane**	4%		15%		
<b>HOSPITAL</b> .....	[73:25:2]						8.3
General		20/bed, 25/1000 sq. ft., 250/acre*	8%	(7:3)	10%	(4:6)	
Convalescent/Nursing		3/bed**	7%	(6:4)	7%	(4:6)	
<b>INDUSTRIAL</b>							
Industrial/Business Park (commercial included) .....	[79:19:2]						9.0
Industrial Park (no commercial)		16/1000 sq. ft., 200/acre* **	12%	(8:2)	12%	(2:8)	
Industrial Plant (multiple shifts) .....	[92:5:3]	8/1000 sq. ft., 90/acre**	11%	(9:1)	12%	(2:8)	
Manufacturing/Assembly		10/1000 sq. ft., 120/acre*	14%	(8:2)	15%	(3:7)	
Warehousing		4/1000 sq. ft., 50/acre**	19%	(9:1)	20%	(2:8)	11.7
Storage		5/1000 sq. ft., 60/acre**	13%	(7:3)	15%	(4:6)	
Science Research & Development		2/1000 sq. ft., 0.2/vault, 30/acre*	8%	(5:5)	9%	(5:5)	
Landfill & Recycling Center		8/1000 sq. ft., 80/acre*	16%	(9:1)	14%	(1:9)	
		6/acre	11%	(5:5)	10%	(4:6)	

(OVER)

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista and County of San Diego.  
ADVISORY/LIAISON MEMBERS: California Department of Transportation, County Water Authority, U.S. Department of Defense, S.D. Unified Port District and Tijuana/Baja California.

LAND USE	TRIP CATEGORIES (PRIMARY:DIVERTED:PASS-BY) <sup>a</sup>	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio)		TRIP LENGTH (Miles) <sup>b</sup>	
			Between 6:00-9:30 A.M.	Between 3:00-6:30 P.M.		
<b>LIBRARY</b> .....	[44:44:12]	50/1000 sq. ft., 400/acre**	2%	(7:3)	10% (5:5)	3.9
<b>LODGING</b> .....	[58:38:4]					7.6
Hotel (w/convention facilities/restaurant)		10/occupied room, 300/acre	6%	(5:4)	8% (5:4)	
Motel		9/occupied room, 200/acre*	8%	(4:6)	9% (5:4)	
Resort Hotel		8/occupied room, 100/acre*	5%	(5:4)	7% (4:5)	
Business Hotel		7/occupied room**	8%	(4:6)	9% (5:4)	
<b>MILITARY</b> .....	[82:15:2]	2.5/military & civilian personnel*	9%	(9:1)	10% (2:8)	11.2
<b>OFFICE</b>						
Standard Commercial Office .....	[77:19:4]	20/1000 sq. ft., 300/acre*	14%	(9:1)	13% (2:8)	8.8
(less than 100,000 sq. ft.)						
Large (High-Rise) Commercial Office .....	[82:15:3]	17/1000 sq. ft., 600/acre*	13%	(9:1)	14% (2:8)	10.0
(more than 100,000 sq. ft., 6+ stories)						
Office Park (400,000+ sq. ft.)		12/1000 sq. ft., 200/acre* **	13%	(9:1)	13% (2:8)	
Single Tenant Office		14/1000 sq. ft., 180/acre*	15%	(9:1)	15% (2:8)	8.8
Corporate Headquarters		7/1000 sq. ft., 110/acre*	17%	(9:1)	16% (1:9)	
Government (Civic Center) .....	[50:34:16]	30/1000 sq. ft.**	9%	(9:1)	12% (3:7)	6.0
Post Office						
Central/Walk-in Only		90/1000 sq. ft.**	5%		7%	
Community (not including mail drop lane)		200/1000 sq. ft., 1300/acre*	8%	(6:4)	9% (5:5)	
Community (w/mail drop lane)		300/1000 sq. ft., 2000/acre*	7%	(5:5)	10% (5:5)	
Mail Drop Lane only		1500 (750 one-way)/lane*	7%	(5:5)	12% (5:5)	
Department of Motor Vehicles		180/1000 sq. ft., 900/acre**	6%	(6:4)	10% (4:6)	
Medical-Dental .....	[60:30:10]	50/1000 sq. ft., 500/acre*	6%	(8:2)	11% (3:7)	6.4
<b>PARKS</b> .....	[66:28:6]					5.4
City (developed w/meeting rooms and sports facilities)		50/acre*	4%		8%	
Regional (developed)		20/acre*	13%	(5:5)	9% (5:5)	
Neighborhood/Country (undeveloped)		5/acre (add for specific sport uses), 6/picnic site* **				
State (average 1000 acres)		1/acre, 10/picnic site**				
Amusement (Theme)		80/acre, 130/acre (summer only)**			6% (6:4)	
San Diego Zoo		115/acre*				
Sea World		80/acre*				
<b>RECREATION</b>						
Beach, Ocean or Bay .....	[52:39:9]	600/1000 ft. shoreline, 60/acre*				6.3
Beach, Lake (fresh water)		50/1000 ft. shoreline, 5/acre*				
Bowling Center		30/1000 sq. ft., 300/acre, 30/lane **	7%	(7:3)	11% (4:6)	
Campground		4/campsite**	4%		8%	
Golf Course		7/acre, 40/hole, 700/course* **	7%	(8:2)	9% (3:7)	
Driving Range only		70/acre, 14/tee box*	3%	(7:3)	9% (5:5)	
Marinas		4/berth, 20/acre* **	3%	(3:7)	7% (6:4)	
Multi-purpose (miniature golf, video arcade, batting cage, etc.)		90/acre	2%		6%	
Racquetball/Health Club		30/1000 sq. ft., 300/acre, 40/court*	4%	(6:4)	9% (5:4)	
Tennis Courts		16/acre, 30/court**	5%		11% (5:5)	
Sports Facilities						
Outdoor Stadium		50/acre, 0.2/seat*				
Indoor Arena		30/acre, 0.1/seat*				
Race-track		40/acre, 0.6 seat*				
Theaters (multiplex w/matinee) .....	[66:17:17]	80/1000 sq. ft., 1.8/seat, 360/screen*	13%		8% (6:4)	6.1
<b>RESIDENTIAL</b> .....	[86:11:3]					7.9
Estate, Urban or Rural		12/dwelling unit**	8%	(3:7)	10% (7:3)	
(average 1-2 DU/acre)						
Single Family Detached		10/dwelling unit**	8%	(3:7)	10% (7:3)	
(average 3-6 DU/acre)						
Condominium		8/dwelling unit**	8%	(2:8)	10% (7:3)	
(or any multi-family 6-20 DU/acre)						
Apartment		6/dwelling unit**	8%	(2:8)	9% (7:3)	
(or any multi-family units more than 20 DU/acre)						
Military Housing (off-base, multi-family)						
(less than 6 DU/acre)		8/dwelling unit	7%	(3:7)	9% (6:4)	
(6-20 DU/acre)		6/dwelling unit	7%	(3:7)	9% (6:4)	
Mobile Home						
Family		5/dwelling unit, 40/acre*	8%	(3:7)	11% (6:4)	
Adults Only		3/dwelling unit, 20/acre*	8%	(3:7)	10% (6:4)	
Retirement Community		4/dwelling unit**	8%	(4:6)	7% (6:4)	
Congregate Care Facility		2.5/dwelling unit**	4%	(6:4)	8% (5:5)	
<b>RESTAURANT<sup>c</sup></b> .....	[51:37:12]					4.7
Quality		100/1000 sq. ft., 3/seat, 500/acre* **	7%	(6:4)	8% (7:3)	
Sit-down, high turnover		160/1000 sq. ft., 6/seat, 1000/acre* **	8%	(5:5)	8% (6:4)	
Fast Food (w/drive-through)		650/1000 sq. ft., 20/seat, 3000/acre* **	7%	(5:5)	7% (5:5)	
Fast Food (without drive-through)		700/1000 sq. ft.**	8%	(6:4)	7% (5:5)	
Delicatessen (7am-4pm)		150/1000 sq. ft., 11/seat*	9%	(6:4)	3% (3:7)	
<b>TRANSPORTATION</b>						
Bus Depot		25/1000 sq. ft.**				
Truck Terminal		10/1000 sq. ft., 7/bay, 80/acre**	9%	(4:6)	8% (5:5)	
Waterport/Marine Terminal		170/berth, 12/acre**				
Transit Station (Light Rail w/parking)		300/acre, 2 <sup>1/2</sup> /parking space (4/occupied)* *	14%	(7:3)	15% (3:7)	
Park & Ride Lots		400/acre (600/paved acre), 5/parking space (8/occupied)* **	14%	(7:3)	15% (3:7)	

\* Primary source: San Diego Traffic Generators.

<sup>a</sup> Other sources: ITE Trip Generation Report (6th Edition), Trip Generation Rates (other agencies and publications), various SANDAG & CALTRANS studies, reports and estimates.

<sup>b</sup> Trip category percentage ratios are daily from local household surveys, often cannot be applied to very specific land uses, and do not include non-resident drivers (draft SANDAG Analysis of Trip Diversion, revised November, 1990).

PRIMARY - one trip directly between origin and primary destination.

DIVERTED - linked trip (having one or more stops along the way to a primary destination) whose distance compared to direct distance ≥ 1 mile.

PASS-BY - undiverted or diverted < 1 mile.

<sup>c</sup> Trip lengths are average weighted for all trips to and from general land use site. (All trips system-wide average length) = 6.9 miles)

<sup>d</sup> Fitted curve equation:  $\ln(T) = 0.502 \ln(d) + 6.945$  } T = total trips, x = 1,000 sq. ft.

<sup>e</sup> Fitted curve equation:  $\ln(T) = 0.756 \ln(x) + 3.950$  }

<sup>f</sup> Fitted curve equation:  $t = -2.169 \ln(d) + 12.85$  } t = trips/DU, d = density (DU/acre), DU = dwelling unit

<sup>g</sup> Suggested PASS-BY (undiverted or diverted < 1 mile) percentages for trip rate reductions only during P.M. peak period (based on combination of local data/review and Other sources\*\*):

COMMERCIAL/RETAIL	Percentage
Regional Shopping Center	20%
Community	30%
Neighborhood	40%
Specialty Retail/Strip Commercial (other)	10%
Supermarket	40%
Convenience Market	50%
Discount Club/Store	30%
FINANCIAL	
Bank	25%
AUTOMOBILE	
Gasoline Station	50%
RESTAURANT	
Quality	10%
Sit-down high turnover	20%
Fast Food	40%

<sup>h</sup> Trip Reductions - In order to help promote regional "smart growth" policies, and acknowledge San Diego's expanding mass transit system, consider vehicle trip rate reductions (with proper documentation and necessary adjustments for peak periods). The following are some examples:

[1] A 5% daily trip reduction for land uses with transit access or near transit stations accessible within 1/4 mile.

[2] Up to 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).



## **Appendix D**

### **Intersection Analysis Worksheets**





AM Existing Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)
Intersection #5 E.Mission Rd & N.Stagecoach

Cycle (sec): 60
Loss Time (sec): 12 (Y+R = 4 sec)
Optimal Cycle: 60
Critical Vol./Cap. (X): 0.724
Average Delay (sec/veh): 20.3
Level Of Service: C

Street Name: N.Stagecoach Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5

Lanes: 0 0 1 0 0 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module: >> Count Date: 23 Jan 2002 << AM

Base Vol: 38 50 138 33 66 22 9 419 4 134 627 10
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12

Initial Bse: 43 56 155 37 74 25 10 469 4 150 702 11
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 45 59 163 39 78 26 11 494 5 158 739 12

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MUF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 45 59 163 39 78 26 11 494 5 158 739 12

AM Existing Conditions

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)
Intersection #6 E.Alvarado St & N.Stagecoach Ln

Cycle (sec): 100
Loss Time (sec): 0 (Y+R = 4 sec)
Optimal Cycle: 0
Critical Vol./Cap. (X): 1.034
Average Delay (sec/veh): 50.4
Level Of Service: F

Street Name: N.Stagecoach Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5

Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0

Volume Module: >> Count Date: 23 Jan 2002 << AM

Base Vol: 123 233 66 25 247 96 133 71 98 70 101 32
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12

Initial Bse: 138 261 74 28 277 108 149 80 110 78 113 36
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 145 275 78 29 291 113 157 84 116 83 119 38

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MUF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 145 275 78 29 291 113 157 84 116 83 119 38

AM Existing Conditions

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #7 Fallbrook St & S. Stagecoach Ln

Cycle (sec): 100 Critical Vol./Cap. (X): 1.165
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 58.5
Optimal Cycle: 0 Level Of Service: F

Street Name: S. Stagecoach Ln Fallbrook Street

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5

Lanes: 1 0 1 0 1 0 0 1 0 1 0 1 0 1 0 1 0

Volume Module: >> Count Date: 23 Jan 2002 << AM

Base Vol: 438 265 27 26 190 174 150 25 318 56 8 4
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
Initial Bse: 491 297 30 29 213 195 168 28 356 63 9 4
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 516 312 32 31 224 205 177 29 375 66 9 5
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 516 312 32 31 224 205 177 29 375 66 9 5
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 516 312 32 31 224 205 177 29 375 66 9 5

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 0.49 0.44 1.00 0.07 0.93 1.00 0.67 0.33
Final Sat.: 443 472 509 32 235 215 423 36 454 362 260 130

Capacity Analysis Module:

Vol/Sat: 1.16 0.66 0.06 0.96 0.96 0.42 0.82 0.82 0.82 0.18 0.04 0.04
Crit Moves: \*\*\*\*
Delay/Veh: 122.4 23.9 10.1 57.6 57.6 57.6 17.0 35.4 35.4 14.4 12.0 12.0
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 122.4 23.9 10.1 57.6 57.6 57.6 17.0 35.4 35.4 14.4 12.0 12.0
LOS by Move: F C B F F F F C E E B B
ApproachDel: 82.5 57.6 57.6 29.8 14.0
Delay Adj: 1.00 1.00 1.00 1.00 1.00
ApprAdjDel: 82.5 57.6 29.8 14.0
LOS by Appr: F F D
\*\*\*\*\*

AM Existing Conditions

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #8 Reche Road & S. Stagecoach Ln

Cycle (sec): 100 Critical Vol./Cap. (X): 1.150
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 82.1
Optimal Cycle: 0 Level Of Service: F

Street Name: S. Stagecoach Ln Reche Road

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5

Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 1 0 0 1 0

Volume Module: >> Count Date: 23 Jan 2002 << AM

Base Vol: 1 143 288 331 159 7 7 4 9 322 7 503
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
Initial Bse: 1 160 323 371 178 8 8 4 10 361 8 563
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 1 169 340 390 187 8 8 5 11 380 8 593
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 169 340 390 187 8 8 5 11 380 8 593
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 1 169 340 390 187 8 8 5 11 380 8 593

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.01 0.33 0.66 0.67 0.32 0.01 0.35 0.20 0.45 1.00 0.01 0.99
Final Sat.: 1 180 363 339 163 7 139 79 179 449 7 520

Capacity Analysis Module:

Vol/Sat: 0.94 0.94 0.94 1.15 1.15 1.15 0.06 0.06 0.06 0.84 1.14 1.14
Crit Moves: \*\*\*\*
Delay/Veh: 49.9 49.9 49.9 113.1 113 113.1 12.5 12.5 12.5 41.1 108 107.7
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 49.9 49.9 49.9 113.1 113 113.1 12.5 12.5 12.5 41.1 108 107.7
LOS by Move: E E E F F F B B B E F F
ApproachDel: 49.9 113.1 113.1 12.5 12.5 81.9
Delay Adj: 1.00 1.00 1.00 1.00 1.00
ApprAdjDel: 49.9 113.1 113.1 12.5 12.5 81.9
LOS by Appr: E F B
\*\*\*\*\*

AM Existing Conditions

Level Of Service Computation Report  
 2000 HCM Operations Method (Base Volume Alternative)  
 \*\*\*\*\*  
 Intersection #9 S.Stagecoach Ln & S.Mission Rd  
 \*\*\*\*\*  
 Cycle (sec): 60 Critical Vol./Cap. (X): 0.799  
 Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.2  
 Optimal Cycle: 63 Level Of Service: C  
 \*\*\*\*\*  
 Street Name: S.Mission Rd S.Stagecoach Ln  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Protected Protected Permitted Permitted Permitted  
 Rights: Include Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5 5 5  
 Lanes: 1 0 1 1 0 2 0 2 0 0 0 0 1 1 0 0 1 0 0 1 0  
 Volume Module: >> Count Date: 16 Jan 2002 << AM  
 Base Vol: 0 709 266 265 643 0 0 0 0 178 0 279  
 Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12  
 Initial Bse: 0 794 298 297 720 0 0 0 0 199 0 312  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 0 836 314 312 758 0 0 0 0 210 0 329  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 0 836 314 312 758 0 0 0 0 210 0 329  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol.: 0 836 314 312 758 0 0 0 0 210 0 329  
 Saturation Flow Module:  
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900  
 Adjustment: 1.00 0.89 0.89 0.90 0.93 1.00 1.00 1.00 1.00 0.75 1.00 0.83  
 Lanes: 1.00 1.45 0.55 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 1.00  
 Final Sat.: 1900 2467 926 3432 3538 0 0 1900 0 1418 0 1569  
 Capacity Analysis Module:  
 Vol/Sat: 0.00 0.34 0.34 0.09 0.21 0.00 0.00 0.00 0.00 0.15 0.00 0.21  
 Crit Moves: \*\*\*\*  
 Green/Cycle: 0.00 0.42 0.42 0.11 0.39 0.00 0.00 0.00 0.00 0.26 0.00 0.26  
 Volume/Cap: 0.00 0.80 0.80 0.80 0.55 0.00 0.00 0.00 0.00 0.56 0.00 0.80  
 Delay/Veh: 0.0 18.3 18.3 37.0 14.8 0.0 0.0 0.0 0.0 21.2 0.0 31.2  
 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 0.0 18.3 18.3 37.0 14.8 0.0 0.0 0.0 0.0 21.2 0.0 31.2  
 HCM2kAVG: 0 12 12 5 6 0 0 0 0 5 0 8  
 \*\*\*\*\*

AM Existing Conditions

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)  
 \*\*\*\*\*  
 Intersection #10 Live Oak Park & Reche Rd.  
 \*\*\*\*\*  
 Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B [ 12.9]  
 \*\*\*\*\*  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include  
 Lanes: 0 0 0 0 0 0 1 1 0 0 1 0 1 0 0 0 0 0 1 0 1  
 Volume Module: AM Peak  
 Base Vol: 0 0 0 0 45 0 35 24 250 0 0 227 50  
 Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12  
 Initial Bse: 0 0 0 0 50 0 39 27 280 0 0 254 56  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 0 0 0 0 53 0 41 28 295 0 0 268 59  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0  
 Final Vol.: 0 0 0 0 53 0 41 28 295 0 0 268 59  
 Critical Gap Module:  
 Critical Gap:xxxxx xxxx xxxxxx 6.4 xxxxx 6.2 4.1 xxxxx xxxxxx xxxxxx xxxxxx  
 FollowUpTrim:xxxxx xxxx xxxxxx 3.5 xxxxx 3.3 2.2 xxxxx xxxxxx xxxxxx xxxxxx  
 Capacity Module:  
 Conflict Vol: xxxxx xxxxx xxxxxx 619 xxxxx 268 327 xxxxx xxxxxx xxxxxx xxxxxx  
 Potent Cap.: xxxxx xxxxx xxxxxx 456 xxxxx 776 1244 xxxxx xxxxxx xxxxxx xxxxxx  
 Move Cap.: xxxxx xxxxx xxxxxx 448 xxxxx 776 1244 xxxxx xxxxxx xxxxxx xxxxxx  
 Volume/Cap: xxxxx xxxxx xxxxxx 0.12 xxxxx 0.05 0.02 xxxxx xxxxxx xxxxxx xxxxxx  
 Level Of Service Module:  
 Queue: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxxx xxxxxx  
 Stopped Del:xxxxx xxxx xxxxxx xxxxxx xxxxxx 8.0 xxxxx xxxxxx xxxxxx xxxxxx  
 LOS by Move: \* \* \* \* \*  
 Movement: LT - LTR - RT  
 Shared Cap.: xxxxx xxxxx xxxxxx xxxxx 549 xxxxxx xxxxx xxxxx xxxxxx  
 SharedQueue:xxxxx xxxx xxxxxx xxxxxx 0.6 xxxxxx xxxxxx xxxxxx xxxxxx  
 Shrd StpDel:xxxxx xxxx xxxxxx xxxxxx 12.9 xxxxxx xxxxxx xxxxxx xxxxxx  
 Shared LOS: \* \* \* \* \*  
 ApproachDel: xxxxxxx 12.9 \* \* \* \* \*  
 ApproachLOS: \* \* \* \* \*  
 \*\*\*\*\*

AM Existing Conditions

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #11 Fallbrook St & S. Main Ave

Cycle (sec): 60 Critical Vol./Cap. (X): 0.785
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 30.4
Optimal Cycle: 67 Level of Service: C

Street Name: S. Main Ave Fallbrook St

Approach: North Bound South Bound East Bound West Bound

Movement: L T R L T R L T R L T R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5

Lanes: 1 0 1 0 1 0 0 1 0 1 0 1 0 0 1 0

Volume Module: >> Count Date: 15 Jan 2002 << AM

Base Vol: 23 337 154 90 212 58 43 217 27 187 306 109
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
Initial Bse: 26 377 172 101 237 65 48 243 30 209 343 122
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 27 397 182 106 250 68 51 256 32 220 361 129
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 27 397 182 106 250 68 51 256 32 220 361 129
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 27 397 182 106 250 68 51 256 32 220 361 129

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.98 0.83 0.93 0.95 0.95 0.93 0.98 0.83 0.93 0.94 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Sat.: 1769 1862 1583 1769 1415 387 1769 1862 1583 1769 1319 470

Capacity Analysis Module:

Vol/Sat: 0.02 0.21 0.11 0.06 0.18 0.18 0.03 0.14 0.02 0.12 0.27 0.27
Crit Moves: \*\*\*\*
Green/Cycle: 0.11 0.25 0.25 0.08 0.23 0.23 0.08 0.21 0.21 0.19 0.32 0.32
Volume/Cap: 0.14 0.86 0.46 0.72 0.78 0.78 0.34 0.65 0.10 0.65 0.86 0.86
Delay/Veh: 24.7 36.4 20.0 42.6 31.5 31.5 27.4 25.6 19.2 26.9 31.7 31.7
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 24.7 36.4 20.0 42.6 31.5 31.5 27.4 25.6 19.2 26.9 31.7 31.7
HCM2kAVg: 1 10 3 4 8 6 1 6 1 5 12 12

\*\*\*\*\*

AM Existing Conditions

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #14 Fallbrook & S. Mission

Cycle (sec): 60 Critical Vol./Cap. (X): 0.742
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 23.8
Optimal Cycle: 62 Level of Service: C

Street Name: S. Mission Fallbrook

Approach: North Bound South Bound East Bound West Bound

Movement: L T R L T R L T R L T R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 5 5 5 5 5 5 5 5 5 5 5 5

Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 0 1 0

Volume Module: >> Count Date: 10 Nov 2004 << AM

Base Vol: 99 313 42 57 783 80 88 82 36 135 89 100
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 99 313 42 57 783 80 88 82 36 135 89 100
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 104 329 44 60 824 84 93 86 38 142 94 105
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 104 329 44 60 824 84 93 86 38 142 94 105
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 104 329 44 60 824 84 93 86 38 142 94 105

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.91 0.91 0.93 0.92 0.92 0.93 0.93 0.93 0.92 0.92 0.92
Lanes: 1.00 1.76 0.24 1.00 1.81 0.19 1.00 0.69 0.31 1.26 0.35 0.39
Final Sat.: 1769 3063 411 1769 3165 323 1769 1234 542 2199 604 679

Capacity Analysis Module:

Vol/Sat: 0.05 0.11 0.11 0.03 0.26 0.26 0.05 0.07 0.07 0.06 0.16 0.16
Crit Moves: \*\*\*\*
Green/Cycle: 0.08 0.24 0.24 0.19 0.35 0.35 0.09 0.09 0.09 0.21 0.21 0.21
Volume/Cap: 0.71 0.44 0.44 0.18 0.75 0.75 0.56 0.75 0.75 0.31 0.75 0.75
Delay/Veh: 41.4 19.6 19.6 20.7 19.8 19.8 30.3 43.3 43.3 20.3 28.9 28.9
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 41.4 19.6 19.6 20.7 19.8 19.8 30.3 43.3 43.3 20.3 28.9 28.9
HCM2kAVg: 4 3 3 1 9 9 3 4 4 2 7 7

\*\*\*\*\*

AM Existing Conditions

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)  
 \*\*\*\*\*  
 Intersection #15 Reche Rd & Los Conejos  
 Average Delay (sec/veh): 1.0 Worst Case Level Of Service: D [ 28.8 ]  
 \*\*\*\*\*

Street Name: Los Conejos  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include  
 Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0

Volume Module: >> Count Date: 10 Nov 2004 << AM  
 Base Vol: 16 0 14 1 0 13 12 529 9 6 594 10  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 16 0 14 1 0 13 12 529 9 6 594 10  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 17 0 15 1 0 14 13 557 9 6 731 11  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Final Vol.: 17 0 15 1 0 14 13 557 9 6 731 11

Critical Gap Module:  
 Critical Gp: 7.1 xxxxx 6.2 7.1 xxxxx 6.2 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx  
 FollowUpTim: 3.5 xxxxx 3.3 3.5 xxxxx 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx

Capacity Module:  
 Conflict Vol: 1362 xxxxx 582 1363 xxxxx 756 751 xxxxx xxxxxx 576 xxxxx xxxxxx  
 Potent Cap.: 125 xxxxx 513 125 xxxxx 408 858 xxxxx xxxxxx 997 xxxxx xxxxxx  
 Move Cap.: 117 xxxxx 505 117 xxxxx 401 851 xxxxx xxxxxx 989 xxxxx xxxxxx  
 Volume/Cap: 0.14 xxxxx 0.03 0.01 xxxxx 0.03 0.01 xxxxx xxxxx 0.01 xxxxx xxxxx

Level Of Service Module:  
 Queue: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 0.0 xxxxx xxxxxx 0.0 xxxxx xxxxxx  
 Stopped Del: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 9.3 xxxxx xxxxxx 8.7 xxxxx xxxxxx  
 LOS by Move: \* \* \* \* \* A \* \* \* \* \* A \* \* \* \* \*  
 Movement: LT - LTR - RT  
 Shared Cap.: xxxxx 182 xxxxxx xxxxx 342 xxxxxx xxxxx xxxxx xxxxxx  
 SharedQueue: xxxxxx 0.6 xxxxxx xxxxxx 0.1 xxxxxx xxxxxx xxxxxx xxxxxx  
 Shrd StpDel: xxxxxx 28.8 xxxxxx xxxxxx 16.0 xxxxxx xxxxxx xxxxxx  
 Shared LOS: \* \* \* \* \* C \* \* \* \* \* \* \* \* \* \*  
 ApproachDel: 28.8 \* \* \* \* \* 16.0 \* \* \* \* \*  
 ApproachLOS: D D C C

PM Existing Conditions

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)  
 \*\*\*\*\*  
 Intersection #1 I-15 NB Ramps & E. Mission  
 Average Delay (sec/veh): 902.1 Worst Case Level Of Service: F [4210.5]  
 \*\*\*\*\*

Street Name: I-15 NB Ramps & E. Mission  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include  
 Lanes: 0 1 0 0 1 0 0 0 0 1 0 1 0 0 0 0 0 1 0

Volume Module: PM Peak  
 Base Vol: 164 1 187 0 0 0 866 195 0 0 239 18  
 Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12  
 Initial Bse: 184 1 209 0 0 0 970 218 0 0 256 20  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 193 1 220 0 0 0 1021 230 0 0 270 21  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Final Vol.: 193 1 220 0 0 0 1021 230 0 0 270 21

Critical Gap Module:  
 Critical Gp: 6.4 6.5 6.2 xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx  
 FollowUpTim: 3.5 4.0 3.3 xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx

Capacity Module:  
 Conflict Vol: 2552 2563 230 xxxxx xxxxx xxxxxx 291 xxxxx xxxxxx  
 Potent Cap.: 30 27 814 xxxxx xxxxx xxxxxx 1282 xxxxx xxxxxx  
 Move Cap.: 10 5 814 xxxxx xxxxx xxxxxx 1282 xxxxx xxxxxx  
 Volume/Cap: 19.11 0.22 0.27 xxxxx xxxxx xxxxxx 0.80 xxxxx xxxxxx

Level Of Service Module:  
 Queue: xxxxxx xxxxx 1.1 xxxxxx xxxxx xxxxxx 9.2 xxxxx xxxxxx xxxxxx  
 Stopped Del: xxxxxx xxxxx 11.1 xxxxxx xxxxx xxxxxx 17.7 xxxxx xxxxxx xxxxxx  
 LOS by Move: \* \* \* \* \* B \* \* \* \* \* C \* \* \* \* \*  
 Movement: LT - LTR - RT  
 Shared Cap.: 10 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxxx xxxxxx  
 SharedQueue: 25.9 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxxx  
 Shrd StpDel: 8970 xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxxx  
 Shared LOS: F \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*  
 ApproachDel: 4210.5 F \* \* \* \* \*  
 ApproachLOS: F F

PM Existing Conditions

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)  
 Intersection #2 I-15 SB Ramps & E. Mission

Average Delay (sec/veh): 8.7 Worst Case Level of Service: D [ 34.0]

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled  
 Rights: Include Include Include Include

Lanes: 0 0 0 0 0 0 1 1 0 0 0 0 1 0 1 0 0

Volume Module: PM Peak

Base Vol:	0	0	0	1	526	0	1040	147	52	364	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1	526	0	1040	147	52	364	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	1	554	0	1095	155	55	383	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	1	554	0	1095	155	55	383	0

Critical Gap Module:

Critical Gap:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx

Capacity Module:

Conflict Vol:	xxxx	xxxx	xxxxx	1665	1742	383	xxxx	xxxx	xxxxx	1249	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	108	88	669	xxxx	xxxx	xxxxx	564	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	100	79	669	xxxx	xxxx	xxxxx	564	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	0.01	0.83	xxxx	xxxx	xxxx	0.10	xxxx	xxxx

Level of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.3	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	12.1	xxxx	xxxxx

LOS by Move:

LT - LTR - RT	*	*	*	*	*	*	*	*	*	*	*	*
LT - LTR - RT	*	*	*	*	*	*	*	*	*	*	*	*

Shared Cap.:

Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxxx							
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Shared Queue:

Shared Queue:	xxxxx	xxxx	xxxxx	xxxx	xxxxx							
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Shrd StpDel:

Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	34.0	xxxx	xxxxx
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Shared LOS:

Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
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ApproachDel:

ApproachDel:	xxxxxx	*	*	*	*	*	*	*	*	34.0	xxxxxx	*
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ApproachLOS:

ApproachLOS:	*	*	*	*	*	*	*	*	*	D	xxxxxx	*
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PM Existing Conditions

Level of Service Computation Report  
 2000 HCM Unsignalized Method (Base Volume Alternative)  
 Intersection #3 E. Mission & I-395

Average Delay (sec/veh): OVERFLOW Worst Case Level of Service: F [xxxxx]

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Uncontrolled Uncontrolled  
 Rights: Include Include Include Include

Lanes: 0 0 0 0 0 1 0 1 0 0 1 0 1 0 0 1 0 0 0 1

Volume Module: PM Peak

Base Vol:	0	0	0	994	46	0	59	198	0	190	0	771
Growth Adj:	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Initial Bse:	0	0	0	1113	52	0	65	222	0	213	0	864
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	0	0	1172	54	0	70	233	0	224	0	909
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	1172	54	0	70	233	0	224	0	909

Critical Gap Module:

Critical Gap:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	xxxxx	7.1	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	xxxxx	3.5	xxxx	3.3

Capacity Module:

Conflict Vol:	xxxx	xxxx	xxxxx	0	xxxx	xxxxx	2398	2398	xxxxx	2515	xxxx	0
Potent Cap.:	xxxx	xxxx	xxxxx	900	xxxx	xxxxx	23	34	xxxxx	19	xxxx	900
Move Cap.:	xxxx	xxxx	xxxxx	900	xxxx	xxxxx	0	0	xxxxx	0	xxxx	900
Volume/Cap:	xxxx	xxxx	xxxx	1.30	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.01

Level of Service Module:

Queue:	xxxxx	xxxx	xxxxx	44.0	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	19.0
Stopped Del:	xxxxx	xxxx	xxxxx	160.4	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	53.9

LOS by Move:

LT - LTR - RT	*	*	*	*	*	*	*	*	*	*	*	*
LT - LTR - RT	*	*	*	*	*	*	*	*	*	*	*	*

Shared Cap.:

Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxxx
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Shared Queue:

Shared Queue:	xxxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxxx
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Shrd StpDel:

Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxxx
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Shared LOS:

Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
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ApproachDel:

ApproachDel:	xxxxxx	*	*	*	*	*	*	*	*	xxxxxx	*	xxxxxx
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ApproachLOS:

ApproachLOS:	*	*	*	*	*	*	*	*	*	F	*	F
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PM Existing Conditions

Level Of Service Computation Report  
 2000 HCM 4-Way Stop Method (Base Volume Alternative)  
 Intersection #6 E.Alvarado St & N.Stagecoach Ln  
 Cycle (sec): 100 Critical Vol./Cap. (X): 0.843  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 24.0  
 Optimal Cycle: 0 Level Of Service: C

Street Name: N.Stagecoach Ln E.Alvarado Street  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Stop Sign Stop Sign  
 Rights: Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5  
 Lanes: 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0

Volume Module: >> Count Date: 23 Jan. 2002 << PM  
 Base Vol: 124 227 52 22 260 69 58 71 117 47 73 13  
 Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12  
 Initial Bse: 139 254 58 25 291 77 65 80 131 53 82 15  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 146 268 61 26 307 81 68 84 138 55 86 15  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 146 268 61 26 307 81 68 84 138 55 86 15  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol.: 146 268 61 26 307 81 68 84 138 55 86 15

Saturation Flow Module:  
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Lanes: 0.31 0.56 0.13 0.06 0.74 0.20 0.24 0.29 0.47 0.35 0.55 0.10  
 Final Sat.: 173 317 73 35 409 109 116 142 233 151 234 42

Capacity Analysis Module:  
 Vol/Sat: 0.84 0.84 0.84 0.75 0.75 0.75 0.59 0.59 0.59 0.37 0.37 0.37  
 Crit Moves: \*\*\*\*  
 Delay/Veh: 31.9 31.9 31.9 23.8 23.8 23.8 17.2 17.2 17.2 13.7 13.7 13.7  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 31.9 31.9 31.9 23.8 23.8 23.8 17.2 17.2 17.2 13.7 13.7 13.7  
 LOS by Move: D D D C C C C C C C C C  
 ApproachDel: 31.9 23.8 23.8 17.2 17.2 17.2 13.7 13.7 13.7  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 ApprAdjDel: 31.9 23.8 23.8 17.2 17.2 17.2 13.7 13.7 13.7  
 LOS by Appr: D C C C C C C C C C C C

PM Existing Conditions

Level Of Service Computation Report  
 2000 HCM 4-Way Stop Method (Base Volume Alternative)  
 Intersection #7 Fallbrook St & S.Stagecoach Ln  
 Cycle (sec): 100 Critical Vol./Cap. (X): 0.963  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 40.2  
 Optimal Cycle: 0 Level Of Service: E

Street Name: S.Stagecoach Ln Fallbrook Street  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Stop Sign Stop Sign  
 Rights: Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5  
 Lanes: 1 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0

Volume Module: >> Count Date: 23 Jan 2002 << PM  
 Base Vol: 375 211 7 3 208 166 149 16 374 4 11 1  
 Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12  
 Initial Bse: 420 236 8 3 233 186 167 18 419 4 12 1  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 442 249 8 4 245 196 176 19 441 5 13 1  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 442 249 8 4 245 196 176 19 441 5 13 1  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol.: 442 249 8 4 245 196 176 19 441 5 13 1

Saturation Flow Module:  
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Lanes: 1.00 1.00 1.00 0.01 0.55 0.44 1.00 0.04 0.96 1.00 0.92 0.08  
 Final Sat.: 459 488 529 4 277 221 445 21 500 363 353 32

Capacity Analysis Module:  
 Vol/Sat: 0.96 0.51 0.02 0.89 0.89 0.89 0.39 0.88 0.88 0.01 0.04 0.04  
 Crit Moves: \*\*\*\*  
 Delay/Veh: 60.9 17.3 9.4 43.1 43.1 43.1 15.8 40.7 40.7 12.3 12.0 12.0  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 60.9 17.3 9.4 43.1 43.1 43.1 15.8 40.7 40.7 12.3 12.0 12.0  
 LOS by Move: F C A E E C E E E B E B  
 ApproachDel: 44.8 43.1 43.1 33.8 33.8  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00  
 ApprAdjDel: 44.8 43.1 43.1 33.8 33.8  
 LOS by Appr: E E D B B

PM Existing Conditions

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #8 Reche Road & S.Stagecoach Ln
Critical Vol./Cap. (X): 0.983
Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 35.1
Optimal Cycle: 0 Level Of Service: E

Street Name: S.Stagecoach Ln Reche Road
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5
Lanes: 0 1 0 0 0 1 0 0 0 0 1 0 0 1 0 0 1 0

Volume Module: >> Count Date: 23 Jan 2002 << PM
Base Vol: 4 139 131 359 119 1 6 1 2 124 1 369
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
Initial Bse: 4 156 147 402 433 1 7 1 2 139 1 413
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 5 164 154 423 140 1 7 1 2 146 1 435
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 5 164 154 423 140 1 7 1 2 146 1 435

Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.01 0.51 0.48 0.75 0.24 0.01 0.67 0.11 0.22 1.00 0.01 0.99
Final Sat.: 8 285 269 430 143 1 273 45 91 476 2 563

Capacity Analysis Module:
Vol/Sat: 0.58 0.58 0.58 0.98 0.98 0.03 0.03 0.03 0.31 0.77 0.77
Crit Moves: \*\*\*\*
Delay/Veh: 17.1 17.1 17.1 58.1 58.1 11.1 11.1 11.1 13.5 26.6 26.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 17.1 17.1 17.1 58.1 58.1 11.1 11.1 11.1 13.5 26.6 26.6
LOS by Move: C C C F F B B B D D
ApproachDel: 17.1 58.1 11.1 23.3
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 17.1 58.1 11.1 23.3
LOS by Appr: C F B C

PM Existing Conditions

Level Of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 S.Stagecoach Ln & S.Mission Rd
Critical Vol./Cap. (X): 0.684
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 60 Level Of Service: E

Street Name: S.Mission Rd S.Stagecoach Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 5 5 5 5 5 5 5 5
Lanes: 1 0 1 1 0 2 0 2 0 0 0 0 1 0 0 1 0 0 1 0

Volume Module: >> Count Date: 16 Jan 2002 << PM
Base Vol: 0 936 175 146 745 0 0 0 0 134 0 158
Growth Adj: 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12
Initial Bse: 0 1048 196 164 834 0 0 0 0 150 0 177
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 0 1103 206 172 878 0 0 0 0 158 0 186
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.: 0 1103 206 172 878 0 0 0 0 158 0 186

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.91 0.91 0.90 0.93 1.00 1.00 1.00 1.00 0.75 1.00 0.83
Lanes: 1.00 1.68 0.32 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 1.00
Final Sat.: 1900 2909 544 3432 3538 0 0 1900 0 1432 0 1593

Capacity Analysis Module:
Vol/Sat: 0.00 0.38 0.38 0.05 0.25 0.00 0.00 0.00 0.00 0.11 0.00 0.12
Crit Moves: \*\*\*\*
Green/Cycle: 0.00 0.55 0.55 0.08 0.47 0.00 0.00 0.00 0.00 0.17 0.00 0.17
Volume/Cap: 0.00 0.69 0.69 0.60 0.53 0.00 0.00 0.00 0.00 0.65 0.00 0.69
Delay/Veh: 0.0 11.1 11.1 30.1 11.4 0.0 0.0 0.0 0.0 29.3 0.0 31.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 11.1 11.1 30.1 11.4 0.0 0.0 0.0 0.0 29.3 0.0 31.1
HCM2KAvG: 0 10 10 3 6 0 0 0 0 5 0 5





AM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report  
 2000 HCM Unsignalized Method (Future Volume Alternative)  
 Intersection #1 I-15 NB Ramps & E. Mission  
 Average Delay (sec/veh): 56.3 Worst Case Level Of Service: F [222.6]  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Stop Sign		Uncontrolled		Uncontrolled	
	Include	Exclude	Include	Exclude	Include	Exclude
Rights:	0	1	0	0	0	0
Lanes:	0	1	0	0	0	0
Volume Module:	172	3	61	0	0	459
Base Vol:	1.00	1.00	1.00	1.00	1.00	1.00
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	172	3	61	0	0	459
Added Vol:	1	0	0	0	1	0
PasserByVol:	0	0	0	0	0	0
Initial Fut:	173	3	61	0	0	460
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	182	3	64	0	0	484
Reduct Vol:	0	0	0	0	0	0
Final Vol:	182	3	64	0	0	484
Critical Gap Module:	6.4	6.5	6.2	xxxxx	xxxxx	xxxxx
Critical Gap:	3.5	4.0	3.3	xxxxx	xxxxx	xxxxx
FollowUpTim:	1.40	0.03	0.07	xxxxx	xxxxx	xxxxx
Capacity Module:	1300	1300	104	xxxxx	xxxxx	xxxxx
Conflict Vol:	180	163	956	xxxxx	xxxxx	1353
Potent Cap:	130	104	956	xxxxx	xxxxx	1353
Move Cap:	1.40	0.03	0.07	xxxxx	xxxxx	xxxxx
Volume/Cap:	0.2	xxxxx	xxxxx	xxxxx	xxxxx	1.6
Level Of Service Module:	9.0	xxxxx	xxxxx	xxxxx	xxxxx	9.1
Queue:	9.0	xxxxx	xxxxx	xxxxx	xxxxx	9.1
Stopped Del:	9.0	xxxxx	xxxxx	xxxxx	xxxxx	9.1
LOS By Move:	A	A	A	A	A	A
Movement:	LT - LTR - RT					
Shared Cap:	129	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Shared Queue:	12.5	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Shrd StpDel:	296.6	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Shared LOS:	F	F	F	F	F	F
ApproachDel:	222.6	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
ApproachLOS:	F	F	F	F	F	F

AM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 I-15 SB Ramps & E. Mission
Average Delay (sec/veh): 23.8 Worst Case Level Of Service: F [ 63.0]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include

Lanes: 0 0 0 0 0 0 1 0 0 0 0 0 1 0 1 0 0 1 0 1 0 0

Volume Module:

Base Vol: 0 0 0 10 1 683 0 569 255 62 281 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 10 1 683 0 569 255 62 281 0
Added Vol: 0 0 0 0 0 0 1 2 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 10 1 683 0 570 257 62 282 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 0 0 0 11 1 719 0 600 271 65 297 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol: 0 0 0 11 1 719 0 600 271 65 297 0

Critical Gap Module:

Critical Gp:xxxx xxx xxxxxx 6.4 6.5 6.2 xxxxxx xxxxxx xxxxxx 4.1 xxxxxx xxxxxx
FollowUpTrim:xxxx xxx xxxxxx 3.5 4.0 3.3 xxxxxx xxxxxx xxxxxx 2.2 xxxxxx xxxxxx

Capacity Module:

Cnflct Vol: xxxxxx xxxxxx 1163 1298 297 xxxxxx xxxxxx xxxxxx 871 xxxxxx xxxxxx
Potent Cap.: xxxxxx xxxxxx 217 163 747 xxxxxx xxxxxx xxxxxx 783 xxxxxx xxxxxx
Move Cap.: xxxxxx xxxxxx 203 150 747 xxxxxx xxxxxx xxxxxx 783 xxxxxx xxxxxx
Volume/Cap.: xxxxxx xxxxxx 0.05 0.01 0.96 xxxxxx xxxxxx xxxxxx 0.08 xxxxxx xxxxxx

Level Of Service Module:

Queue: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.3 xxxxxx xxxxxx
Stopped Del:xxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 10.0 xxxxxx xxxxxx
LOS by Move: \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxxx xxxxxx xxxxxx 716 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue:xxxx xxxxxx xxxxxx xxxxxx 17.5 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd StpDel:xxxx xxxxxx xxxxxx xxxxxx 63.0 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: \* \* \* \* \*
ApproachDel: xxxxxx 63.0 xxxxxx
ApproachLOS: \* \* \* \* \*

AM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 E. Mission & I-395
Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F [xxxxx]

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Uncontrolled Uncontrolled
Rights: Include Include Include Include

Lanes: 0 0 0 0 0 1 0 1 0 0 1 0 1 0 0 1 0 0 0 1 0 0 0 1

Volume Module:

Base Vol: 0 0 0 521 60 0 521 60 0 63 210 0 179 0 819
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 0 0 521 60 0 521 60 0 63 210 0 179 0 819
Added Vol: 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 522 60 0 522 60 0 63 211 0 179 0 820
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 0 0 0 549 63 0 549 63 0 66 222 0 188 0 863
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Final Vol: 0 0 0 549 63 0 549 63 0 66 222 0 188 0 863

Critical Gap Module:

Critical Gp:xxxx xxx xxxxxx 4.1 xxxxxx xxxxxx 7.1 6.5 xxxxxx 7.1 xxxxxx 6.2
FollowUpTrim:xxxx xxx xxxxxx 2.2 xxxxxx xxxxxx 3.5 4.0 xxxxxx 3.5 xxxxxx 3.3

Capacity Module:

Cnflct Vol: xxxxxx xxxxxx xxxxxx 0 xxxxxx xxxxxx 1162 1162 xxxxxx 1273 xxxxxx 0
Potent Cap.: xxxxxx xxxxxx xxxxxx 900 xxxxxx xxxxxx 174 197 xxxxxx 146 xxxxxx 900
Move Cap.: xxxxxx xxxxxx xxxxxx 900 xxxxxx xxxxxx 4 77 xxxxxx 0 xxxxxx 900
Volume/Cap.: xxxxxx xxxxxx xxxxxx 0.61 xxxxxx xxxxxx 18.21 2.90 xxxxxx xxxxxx xxxxxx 0.96

Level Of Service Module:

Queue: xxxxxx xxxxxx xxxxxx 4.3 xxxxxx xxxxxx 10.3 22.0 xxxxxx xxxxxx xxxxxx 15.8
Stopped Del:xxxx xxxxxx xxxxxx 15.1 xxxxxx xxxxxx 9672 974 xxxxxx xxxxxx xxxxxx 42.3
LOS by Move: \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue:xxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd StpDel:xxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: \* \* \* \* \*
ApproachDel: xxxxxx 2973.6 xxxxxx
ApproachLOS: \* \* \* \* \*



AM Near-Term (Cumulative) Plus Project Conditions

Level of Service Computation Report  
 2000 HCM 4-Way Stop Method (Future Volume Alternative)  
 Intersection #6 E.Alvarado St & N.Stagecoach Ln  
 Cycle (sec): 100 Critical Vol./Cap. (X): 1.113  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 52.2  
 Optimal Cycle: 0 Level of Service: F

Street Name: N.Stagecoach Ln E.Alvarado Street  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Stop Sign Stop Sign  
 Rights: Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5  
 Lanes: 0 0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0

Volume Module: AM CUMULATIVE  
 Base Vol: 158 287 66 25 307 116 143 71 116 70 101 32  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 158 287 66 25 307 116 143 71 116 70 101 32  
 Added Vol: 1 0 0 0 0 0 0 0 0 0 0 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 159 288 66 25 307 116 143 71 116 70 101 32  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 167 303 69 26 323 122 151 75 122 74 106 34  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 167 303 69 26 323 122 151 75 122 74 106 34  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol: 167 303 69 26 323 122 151 75 122 74 106 34

Saturation Flow Module:  
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Lanes: 0.31 0.56 0.13 0.06 0.68 0.26 0.43 0.22 0.35 0.34 0.50 0.16  
 Final Sat.: 150 272 62 27 334 126 195 97 158 140 203 64

Capacity Analysis Module:  
 Vol/Sat: 1.11 1.11 1.11 0.97 0.97 0.97 0.77 0.77 0.77 0.52 0.52 0.52  
 Crit Moves: \*\*\*\*  
 Delay/Veh: 101.8 102 101.8 58.9 58.9 58.9 31.4 31.4 31.4 19.9 19.9 19.9  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 101.8 102 101.8 58.9 58.9 58.9 31.4 31.4 31.4 19.9 19.9 19.9  
 LOS by Move: F F F F F F D D D C C C  
 ApproachDel: 101.8 58.9 31.4 19.9  
 Delay Adj: 1.00 1.00 1.00 1.00  
 ApprAdjDel: 101.8 58.9 31.4 19.9  
 LOS by Appr: F F D D C C

AM Near-Term (Cumulative) Plus Project Conditions

Level of Service Computation Report  
 2000 HCM 4-Way Stop Method (Future Volume Alternative)  
 Intersection #7 Fallbrook St & S.Stagecoach Ln  
 Cycle (sec): 100 Critical Vol./Cap. (X): 1.234  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 71.4  
 Optimal Cycle: 0 Level of Service: F

Street Name: S.Stagecoach Ln Fallbrook Street  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Stop Sign Stop Sign  
 Rights: Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5  
 Lanes: 1 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0

Volume Module: AM CUMULATIVE  
 Base Vol: 517 336 27 26 241 204 171 25 364 56 8 4  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 517 336 27 26 241 204 171 25 364 56 8 4  
 Added Vol: 1 2 0 0 0 0 0 0 0 0 0 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 518 338 27 26 242 204 171 25 364 56 8 4  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 545 356 28 27 255 215 180 26 383 59 8 4  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 545 356 28 27 255 215 180 26 383 59 8 4  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol: 545 356 28 27 255 215 180 26 383 59 8 4

Saturation Flow Module:  
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Lanes: 1.00 1.00 1.00 0.06 0.51 0.43 1.00 0.06 0.94 1.00 0.67 0.33  
 Final Sat.: 442 470 506 27 248 209 424 32 459 360 259 130

Capacity Analysis Module:  
 Vol/Sat: 1.23 0.76 0.06 1.03 1.03 1.03 0.42 0.84 0.84 0.16 0.03 0.03  
 Crit Moves: \*\*\*\*  
 Delay/Veh: 148.8 30.3 10.0 75.8 75.8 75.8 17.3 36.9 36.9 14.3 12.0 12.0  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 148.8 30.3 10.0 75.8 75.8 75.8 17.3 36.9 36.9 14.3 12.0 12.0  
 LOS by Move: F D B F F F C E E B B B  
 ApproachDel: 99.2 75.8 30.9  
 Delay Adj: 1.00 1.00 1.00  
 ApprAdjDel: 99.2 75.8 30.9  
 LOS by Appr: F F D

AM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Reche Road & S. Stagecoach Ln

Cycle (sec): 100 Critical Vol./Cap. (X): 1.244
Loss time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 101.4
Optimal Cycle: 0 Level Of Service: F

Street Name: S. Stagecoach Ln Reche Road

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 5 5 5 5 5 5 5 5

Lanes: 0 0 1 0 0 0 1 0 0 0 1 0 0 1 0 0 1 0

Volume Module: AM CUMULATIVE

Base Vol: 1 196 297 386 189 7 7 4 9 338 7 612

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 1 196 297 386 189 7 7 4 9 338 7 612

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 1 196 297 387 189 7 7 4 9 338 7 615

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95

PHF Volume: 1 206 313 407 199 7 7 4 9 356 7 647

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol: 1 206 313 407 199 7 7 4 9 356 7 647

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.01 0.39 0.60 0.67 0.32 0.01 0.35 0.20 0.45 1.00 0.01 1.00

Final Sat.: 1 215 326 337 165 6 139 79 179 449 6 520

Capacity Analysis Module:

Vol/Sat: 0.96 0.96 0.96 1.21 1.21 1.21 0.05 0.05 0.05 0.79 1.24 1.24

Crit Moves: 54.8 54.8 54.8 134.2 134 134.2 12.5 12.5 12.5 35.1 147 146.7

Delay/Veh: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 54.8 54.8 54.8 134.2 134 134.2 12.5 12.5 12.5 35.1 147 146.7

LOS by Move: F F F F B B B E F F

ApproachDel: 54.8 134.2 107.4

Delay Adj: 1.00 1.00 1.00

ApprAdjDel: 54.8 134.2 107.4

LOS by Appr: F B F

\*\*\*\*\*

AM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #9 S. Stagecoach Ln & S. Mission Rd

Cycle (sec): 60 Critical Vol./Cap. (X): 0.822
Loss time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 21.7
Optimal Cycle: 57 Level Of Service: C

Street Name: S. Mission Rd S. Stagecoach Ln

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Include Include Include Include

Min. Green: 5 5 5 5 5 5 5 5

Lanes: 1 0 1 1 0 2 0 2 0 0 0 0 1 0 0 1 0 0 1 0

Volume Module: AM CUMULATIVE

Base Vol: 0 902 290 278 741 0 0 0 0 214 0 305

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 902 290 278 741 0 0 0 0 214 0 305

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 902 290 278 741 0 0 0 0 214 0 305

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95

PHF Volume: 0 949 305 293 780 0 0 0 0 225 0 321

Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Vol.: 0 949 305 293 780 0 0 0 0 225 0 321

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 0.90 0.90 0.90 0.93 1.00 1.00 1.00 1.00 0.75 1.00 0.83

Final Sat.: 1.00 1.51 0.49 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 1.00

Capacity Analysis Module:

Vol/Sat: 0.00 0.37 0.37 0.09 0.22 0.00 0.00 0.00 0.00 0.16 0.00 0.20

Crit Moves: 0.00 0.45 0.45 0.10 0.40 0.00 0.00 0.00 0.00 0.25 0.00 0.25

Delay/Veh: 0.00 0.82 0.82 0.82 0.55 0.00 0.00 0.00 0.00 0.64 0.00 0.82

AdjDel/Veh: 0.0 18.2 18.2 40.6 14.3 0.0 0.0 0.0 0.0 24.0 0.0 34.4

LOS by Move: F F F F B B B E F F

ApproachDel: 0.0 18.2 18.2 40.6 14.3 0.0 0.0 0.0 0.0 24.0 0.0 34.4

Delay Adj: 0.0 13 13 5 6 0 0 0 0 6 0 8

ApprAdjDel: 0.0 13 13 5 6 0 0 0 0 6 0 8

LOS by Appr: F B F

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PM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)  
 Intersection #1 I-15 NB Ramps & E. Mission  
 Average Delay (sec/veh): 881.1 Worst Case Level Of Service: F [3156.2]  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Stop Sign	Stop sign	Uncontrolled	Uncontrolled
Rights:	Include	Include	Include	Include
Lanes:	0 1 0 0 1	0 0 0 0 0	1 0 0 1 0	0 0 0 1 0

Volume Module:	230	-40	234	0	0	0	940	29	-49	-47	232	18
Base Vol:	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Growth Adj:	230	0	234	0	0	0	940	29	0	0	232	18
Initial Bse:	2	0	0	0	0	0	1	0	0	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	232	0	234	0	0	0	941	29	0	0	232	18
Initial Fut:	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
User Adj:	0.95	0.00	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.00	0.95	0.95
PHF Adj:	244	0	246	0	0	0	991	31	0	0	244	19
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	0
Reduct Vol:	244	0	246	0	0	0	991	31	0	0	244	19
Final Vol:	6.4	xxxxx	6.4	xxxxx	xxxxx	xxxxx	4.1	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Critical Gap Module:	3.5	xxxxx	3.3	xxxxx	xxxxx	xxxxx	2.2	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Critical Gap:	31	xxxxx	31	xxxxx	xxxxx	xxxxx	263	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Conflict Vol:	45	xxxxx	1050	xxxxx	xxxxx	xxxxx	1313	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Potent Cap.:	17	xxxxx	1050	xxxxx	xxxxx	xxxxx	1313	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Move Cap.:	14.11	xxxxx	0.23	xxxxx	xxxxx	xxxxx	0.75	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Volume/Cap:	0.9	xxxxx	0.9	xxxxx	xxxxx	xxxxx	7.7	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Level Of Service Module:	9.5	xxxxx	9.5	xxxxx	xxxxx	xxxxx	15.6	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Queue:	*	A	*	*	*	*	C	*	*	*	*	*
Stopped Del:xxxxx	LT - LTR - RT											
LOS by Move:	17	xxxxx										
Movement:	31.3	xxxxx										
Shared Cap.:	6330	xxxxx										
Shared Queue:	F	*	*	*	*	*	*	*	*	*	*	*
Shrd StpDel:	3156.2	xxxxxxx	*	*	*	*	xxxxxxx	*	*	*	xxxxxxx	*
Shard StpDel:	F	*	*	*	*	*	*	*	*	*	*	*
Shared LOS:	3156.2	xxxxxxx	*	*	*	*	xxxxxxx	*	*	*	xxxxxxx	*
ApproachDel:	F	*	*	*	*	*	*	*	*	*	*	*
ApproachLOS:												



PM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #4 E.Mission Rd & Live Oak Park Rd

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: F [ 57.0]
Street Name: Live Oak Park Rd E.Mission Rd
Approach: North Bound South Bound East Bound West Bound

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0

Volume Module: PM CUMULATIVE
Base Vol: 11 0 68 0 0 0 0 1058 20 113 723 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 11 0 68 0 0 0 0 0 0 0 1 1 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 12 0 72 0 0 0 0 1114 21 120 762 0
Final Vol.: 12 0 72 0 0 0 0 1114 21 120 762 0

Critical Gap Module:
Critical Gap: 6.4 xxxxx 6.2 xxxxx xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTrm: 3.5 xxxxx 3.3 xxxxx xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 2146 xxxxx 1144 xxxxx xxxxx xxxxx xxxxx xxxxx 1145 xxxxx xxxxx
Potential Cap.: 53 xxxxx 243 xxxxx xxxxx xxxxx xxxxx xxxxx 610 xxxxx xxxxx

Queue: xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.7 xxxxx xxxxx
Stopped Del.: xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 12.4 xxxxx xxxxx

LOS by Move: \* \* \* \* \*
Movement: LF - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 148 xxxxxx xxxxx 0 xxxxxx xxxxx xxxxx xxxxx

PM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #5 E.Mission Rd & N.Stagecoach

Average Delay (sec/veh): 60 Critical Vol./Cap. (X): 1.124
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 70.1
Optimal Cycle: 180 Level Of Service: E

Street Name: N.Stagecoach Ln East Mission Road
Approach: North Bound South Bound East Bound West Bound

Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 0 0 1 0 1 0 1 0 1 0

Volume Module: AM CUMULATIVE
Base Vol: 54 49 182 27 46 20 38 1051 19 191 523 29
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 54 49 182 27 46 20 38 1051 19 191 523 29
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 57 52 192 28 48 21 40 1106 20 202 551 31
Final Vol.: 57 52 192 28 48 21 40 1106 20 202 551 31

Saturation Flow Module:
Sat./Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.83 0.83 0.83 0.68 0.68 0.68 0.83 0.93 0.98 0.83 0.93 0.97

Final Sat.: 298 270 1004 373 636 276 1769 1862 1583 1769 1750 97
Capacity Analysis Module:
Vol/Sat: 0.19 0.19 0.19 0.08 0.08 0.08 0.02 0.59 0.01 0.11 0.31 0.31

Crit Moves: \*\*\*\*
Green/Cycle: 0.17 0.17 0.17 0.17 0.17 0.17 0.13 0.53 0.53 0.10 0.50 0.50
Volume/Cap: 1.12 1.12 1.12 0.45 0.45 0.45 0.17 1.12 0.02 1.12 0.63 0.63



PM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report  
 2000 HCM 4-Way Stop Method [Future Volume Alternative]  
 Intersection #8 Reche Road & S.Stagecoach Ln  
 Cycle (sec): 100  
 Loss Time (sec): 0 (Y+R = 4 sec) Average Delay (sec/veh): 67.3  
 Optimal Cycle: 0 Level Of Service: F

Street Name: S.Stagecoach Ln Reche Road  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Stop Sign Stop Sign Stop Sign Stop Sign  
 Rights: Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5  
 Lanes: 0 0 1 0 0 0 1 0 0 0 1 0 0 1 0 0 1 0

Volume Module: PM CUMULATIVE  
 Base Vol: 4 170 154 490 149 1 6 1 2 134 1 434  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 4 170 154 490 149 1 6 1 2 134 1 434  
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 4 170 154 493 149 1 6 1 2 134 1 436  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 4 179 162 519 157 1 6 1 2 141 1 459  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 4 179 162 519 157 1 6 1 2 141 1 459  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol: 4 179 162 519 157 1 6 1 2 141 1 459

Saturation Flow Module:  
 Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Lanes: 0.01 0.52 0.47 0.76 0.23 0.01 0.67 0.11 0.22 1.00 0.01 0.99  
 Final Sat.: 7 288 261 432 131 1 269 45 90 473 1 559

Capacity Analysis Module:  
 Vol/Sat: 0.62 0.62 0.62 1.20 1.20 1.20 0.02 0.02 0.02 0.02 0.30 0.82 0.82  
 Crit Moves: \*\*\*\*  
 Delay/Veh: 18.9 18.9 18.9 128.4 128 128.4 11.3 11.3 11.3 13.5 31.4 31.4  
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 18.9 18.9 18.9 128.4 128 128.4 11.3 11.3 11.3 13.5 31.4 31.4  
 LOS by Move: C C C F F F B B B D  
 ApproachDel: 18.9 128.4 128.4 27.2  
 Delay Adj: 1.00 1.00 1.00 1.00  
 ApprAdjDel: 18.9 128.4 128.4 27.2  
 LOS by Appr: C F B D

PM Near-Term (Cumulative) Plus Project Conditions

Level Of Service Computation Report  
 2000 HCM Operations Method [Future Volume Alternative]  
 Intersection #9 S.Stagecoach Ln & S.Mission Rd  
 Cycle (sec): 60  
 Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 15.2  
 Optimal Cycle: 60 Level Of Service: B

Street Name: S.Mission Rd S.Stagecoach Ln  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R  
 Control: Protected Protected Protected Protected  
 Rights: Include Include Include Include  
 Min. Green: 5 5 5 5 5 5 5 5  
 Lanes: 1 0 1 1 0 2 0 2 0 0 0 0 1 0 0 1 0 0 1 0

Volume Module: PM CUMULATIVE  
 Base Vol: 0 1079 214 172 944 0 0 0 0 0 0 0 160 0 178  
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Initial Bse: 0 1079 214 172 944 0 0 0 0 0 0 0 160 0 178  
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
 Initial Fut: 0 1079 214 172 944 0 0 0 0 0 0 0 160 0 178  
 User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95  
 PHF Volume: 0 1136 225 181 994 0 0 0 0 0 0 0 168 0 187  
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
 Reduced Vol: 0 1136 225 181 994 0 0 0 0 0 0 0 168 0 187  
 PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Final Vol: 0 1136 225 181 994 0 0 0 0 0 0 0 168 0 187

Saturation Flow Module:  
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900  
 Adjustment: 1.00 0.91 0.91 0.90 0.93 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 Lanes: 1.00 1.67 0.33 2.00 2.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  
 Final Sat.: 1900 2878 571 3432 3538 0 0 1900 0 1432 0 1583

Capacity Analysis Module:  
 Vol/Sat: 0.00 0.39 0.39 0.05 0.28 0.00 0.00 0.00 0.00 0.12 0.00 0.12  
 Crit Moves: \*\*\*\*  
 Green/Cycle: 0.00 0.55 0.55 0.08 0.49 0.00 0.00 0.00 0.00 0.16 0.00 0.16  
 Volume/Cap: 0.00 0.71 0.71 0.63 0.57 0.00 0.00 0.00 0.00 0.71 0.00 0.72  
 Delay/Veh: 0.0 11.3 11.3 31.2 11.3 0.0 0.0 0.0 0.0 33.7 0.0 33.1  
 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00  
 AdjDel/Veh: 0.0 11.3 11.3 31.2 11.3 0.0 0.0 0.0 0.0 33.7 0.0 33.1  
 HCMZKAVG: 0 11 11 3 7 0 0 0 0 6 0 5



